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ANCIENT POTTERY
OF THE
MISSISSIPPI VALLEY.
BY
WILLIAM H. HOLMES.

Ceramic groups—Continued.	Page.
Middle Mississippi province—Continued.	
High-necked bottles	411
Form	411
Ornament	412
Illustrations	413
Ordinary forms	413
Eccentric forms	420
Life forms	422
Upper Mississippi province	426
Gulf province	431
Résumé	434

ILLUSTRATIONS.

	Page
FIG. 361.—Scale of forms.....	376
362.—Forms of bowls.....	376
363.—Rim modification.....	377
364.—Bowl: Arkansas.....	378
365.—Bowl: Arkansas.....	378
366.—Cup: Arkansas.....	379
367.—Bowl: Arkansas.....	379
368.—Bowl: Arkansas.....	380
369.—Cup: Arkansas.....	380
370.—Cup: Arkansas.....	380
371.—Rectangular bowl: Arkansas.....	381
372.—Burial casket: Tennessee.....	381
373.—Trough-shaped vessel: Arkansas.....	382
374.—Clay vessels imitating shell.....	384
375.—Bowl imitating a conch shell.....	384
376.—Frog-shaped bowl: Arkansas.....	385
377.—Frog-shaped bowl: Arkansas.....	385
378.—Animal-shaped bowl: Arkansas.....	385
379.—Bird-shaped bowl: Arkansas.....	386
380.—Bird-shaped bowl: Arkansas.....	386
381.—Bird-shaped bowl: Arkansas.....	387
382.—Bowl with grotesque heads: Arkansas.....	387
383.—Heads of birds.....	388
384.—Grotesque heads.....	388
385.—Bowl with grotesque head: Arkansas.....	389
386.—Bowl with grotesque head: Arkansas.....	389
387.—Bowl with grotesque handle: Arkansas.....	390
388.—Animal-shaped bowl: Arkansas.....	390
389.—Animal-shaped bowl: Arkansas.....	391
390.—Bowl with bat's head: Arkansas.....	392
391.—Bowl: Arkansas.....	392
392.—Forms of pots.....	393
393.—Handles.....	393
394.—Pot: Arkansas.....	394
395.—Pot: Arkansas.....	395
396.—Pot: Tennessee.....	395
397.—Pot: Arkansas.....	395
398.—Pot: Arkansas.....	395
399.—Pot: Alabama.....	396
400.—Pot: Arkansas.....	396
401.—Pot: Arkansas.....	396
402.—Pot: Arkansas.....	396
403.—Pot: Arkansas.....	397
404.—Pot: Tennessee.....	397
405.—Pot: Arkansas.....	398
406.—Forms of jar-shaped bottles.....	399
407.—Bottle: Arkansas.....	399
408.—Bottle: Arkansas.....	400

	Page.
409.—Bottle: Arkansas	400
410.—Engraved bottle: Arkansas	401
411.—Engraved bottle: Arkansas	401
412.—Engraved design	402
413.—Teapot-shaped vessel: Arkansas	403
414.—Vessel of eccentric form: Arkansas	403
415.—Vessel of eccentric form: Arkansas	404
416.—Animal-shaped vase: Arkansas	404
417.—Sun-fish vase: Arkansas	405
418.—Opossum vase: Arkansas	405
419.—Animal-shaped vase: Arkansas	406
420.—Head-shaped vase: Arkansas	407
421.—Engraved figures	408
422.—Head covering	408
423.—Head-shaped vase: Arkansas	409
424.—Head-shaped vase: Arkansas	410
425.—Scale of forms	411
426.—Tripods	411
427.—Stands	412
428.—Compound forms of vessels	412
429.—Adaptation of the human form	412
430.—Bottle: Tennessee	413
431.—Gourd-shaped vessel: Tennessee	413
432.—Bottle: Arkansas	414
433.—Bottle: Arkansas	414
434.—Bottle: Arkansas	415
435.—Engraved bottle: Arkansas	416
436.—Bottle: Arkansas	417
437.—Bottle: Arkansas	417
438.—Bottle: Arkansas	418
439.—Fluted bottle: Arkansas	419
440.—Engraved bottle: Arkansas	419
441.—Tripod bottle: Arkansas	420
442.—Tripod bottle: Arkansas	421
443.—Tripod bottle: Arkansas	421
444.—Bottle of eccentric form: Arkansas	422
445.—Owl-shaped bottle: Arkansas	420
446.—Bear-shaped bottle: Tennessee	423
447.—Bear-shaped bottle: Arkansas	423
448.—Bottle with human head: Arkansas	424
449.—Bottle with human head: Arkansas	424
450.—Bottle with human head: Arkansas	424
451.—Bottle with human head: Arkansas	424
452.—Bottle with human head: Arkansas	425
453.—Position of feet	425
454.—Bottle with human form: Arkansas	426
455.—Bottle with human form: Arkansas	426
456.—Vase: Iowa	428
457.—Vase: Wisconsin	429
458.—Vase: Illinois	430
459.—Cup: Alabama	431
460.—Bowl: Alabama	432
461.—Bottle: Mississippi	432
462.—Bottle: Alabama	433
463.—Painted design	434

ANCIENT POTTERY OF THE MISSISSIPPI VALLEY.

By WILLIAM H. HOLMES.

INTRODUCTORY.

This paper is the third of a series of preliminary studies of aboriginal ceramic art which are intended to be absorbed into a final work of a comprehensive character.

The groups of relics selected for these studies are in all cases of limited extent, and are such as can lay claim to a considerable degree of completeness. It is true that no series of archæologic objects can ever be considered complete, but in exceptional cases the sources of supply may be so thoroughly explored that the development of new features of importance cannot reasonably be expected. If any series of American ceramic products has reached such a condition, it is that of the middle portions of the Mississippi Valley; yet, even in this case, I consider it unwise to attempt a monographic study, and prefer to single out a particular collection, making it the subject of a thorough investigation.

When the idea of preparing such a paper was first conceived, the collection presenting the greatest advantages was that of the Academy of Natural Sciences at Davenport, Iowa, which was, therefore, chosen. Other museums, especially those at Cambridge, Saint Louis, and Washington, were rich in material from this region, but none of these collections were so homogeneous and satisfactory.

The National Museum has recently received important accessions from the Mississippi Valley, through the agency of the Bureau of Ethnology, and ere the publication of this paper will probably excel all others in the number and variety of its mound relics. Some of its material has already been published by Dr. Charles Rau, Prof. C. C. Jones, Dr. Joseph Jones, and myself, and several additional examples are given in this paper.

Professor F. W. Putnam has described and illustrated many pieces belonging to the Peabody Museum, and Professor W. B. Potter and Dr. Edward Evers have issued an important work on the Saint Louis collections, in Contributions to the Archæology of Missouri.

This study is intended to pave the way to a thorough classification of the multitude of relics, and to the discovery of a method of procedure suited to a broad and exhaustive treatment of the ceramic art.

I do not expect to discuss ethnical questions, although ceramic studies will eventually be of assistance in determining the distribution and migrations of peoples, and in fixing the chronology of very remote events in the history of pottery-making races.

Some of the results of my studies of the evolutionary phase of the subject are embodied in an accompanying paper upon the "Origin and Development of Form and Ornament," and a second paper will soon follow. Before the final work is issued I hope to make close studies of all the principal collections, public and private. In such a work the importance of great numbers of examples cannot be overestimated. Facts can be learned from a few specimens, but relationships and principles can only be derived from the study of multitudes.

I shall probably have occasion to modify many of the views advanced in these preliminary papers, but it is only by pushing out such advance guards that the final goal can be reached.

Since the original issue of this paper in the Proceedings of the Davenport Academy of Sciences, a careful revision of the text has been made and much additional matter and a number of illustrations have been added.

I wish in this place to express my obligations to the officers and members of the Davenport Academy of Sciences, and especially to Mrs. M. L. D. Putnam and Prof. W. H. Pratt, whose generous aid has been of the greatest service to me.

CERAMIC GROUPS.

In studying the collections from the Mississippi Valley, I find it convenient to classify the ceramic products in three great groups, which belong to as many pretty well-defined districts; these I have named, for convenience of treatment, the Upper Mississippi, the Middle Mississippi, and the Lower Mississippi or Gulf provinces. Other pottery occurs within the limits of these areas, but the examples found in the museums are so few that very little of importance can be learned from them.

The three groups enumerated are not equally represented. The great body of our collections is from the middle province. The ware of the Lower Mississippi or Gulf district, of which we have but a small number of pieces, has many features in common with the pottery of the middle district, and at the same time is identical in most respects with that of the Gulf coast to the east. No well-defined line can be drawn between them; but the ware of the north is wholly distinct and need never be confounded with the other groups.

MIDDLE MISSISSIPPI PROVINCE.

DISTRIBUTION.—It must not be inferred that there is perfect uniformity in the pottery of this, or any other, extended region; local peculiarities are always to be found. The products of contiguous districts, such, for example, as those of Mississippi County, Arkansas, and New Madrid County, Missouri, have much in common, and will at once be recognized as belonging to the same family, yet the differences are so marked that the unskilled observer could point them out with ease.

As indicated by decided family resemblances, the wares of this group extend over the greater part of the States of Missouri, Arkansas, and Tennessee, cover large portions of Mississippi, Kentucky, and Illinois, and reach somewhat into Iowa, Indiana, Alabama, Louisiana, and Texas. The types are better marked and the products more abundant about the center of this area, which may be defined roughly as including contiguous parts of Missouri, Arkansas, and Tennessee, with a pretty decided focal center, at least in the abundance of relics, at Pecan Point, Arkansas.

The borders of the district are necessarily not clearly defined. The characters of the art products blend more or less with those of neigh-

boring sections. This is a usual phenomenon, and is probably due to a variety of causes. The mere contact of peoples leads to the exchange of ideas, and, consequently, to similarities in the products of industry. A change of habitat, with its consequent change of environment, is capable of modifying art to a great extent. Groups of relics and remains attributed by archaeologists to distinct stocks of people, may, in cases, be the work of one and the same people executed under the influence of different environments and at widely separated periods of time.

Mixed conditions in the remains of a locality are often due to the presence of different peoples, synchronously or otherwise. This occurs in many places on the outskirts of this district, a good illustration being found in East Tennessee, where three or four distinct groups of ware are intermingled. As would naturally be expected, the distribution is governed somewhat by the great water-ways, and pottery of this province is found far up the Ohio, Tennessee, and Arkansas Rivers.

How FOUND.—All peoples have resorted, at some period of their history, to the practice of burying articles of use or value with the dead. It is to this custom that we owe the preservation of so many entire pieces of these fragile utensils. They are exhumed from burial mounds in great numbers, and to an equal extent, perhaps, from simple, unmarked graves which are constantly being brought to light by the plowshare. Fragmentary ware is found also in refuse heaps, on house and village sites, and scattered broadcast over the face of the land.

This pottery, at its best, was probably not greatly superior in hardness to our own soft earthenware, and the disintegrating agencies of the soil have often reduced it to a very fragile state. Some writer has expressed the belief that a considerable portion of the ware of this province was sun-baked merely. This view is hardly a safe one, however, as clay, unmixed with lime or other like indurating ingredient, no matter how long exposed to the rays of the sun, would, from ages of contact with the moist earth, certainly return to its original condition. I have seen but few pieces that, even after the bleaching of centuries, did not show traces of the dark mottlings that result from imperfect firing. There probably was a period of unbaked clay preceding the terra-cotta epoch, but we cannot expect to find definite traces of its existence except, perhaps, in cases where large masses, such as mounds or fortifications, were employed.

The relations of the various articles of pottery to the bodies with which they were associated seem to be quite varied. The position of each vessel was determined by its contents, by its symbolic use, or by the pleasure of the depositor. Uniformity cannot be expected in this more than in other features of burial. In other sections of the country the pieces of pottery are said to have been broken before final interment took place, but such was certainly not the practice in this province.

AGE.—There can be no reasonable doubt that the manufacture of this ware began many centuries before the advent of the white race, but it is equally certain that the art was extensively practiced until quite recent times. The early explorers of Louisiana saw it in use, and the processes of manufacture are described by Dumont and others.

Possibly Du Pratz had in mind some of the identical vessels now upon our museum shelves when he said that "the women make pots of an extraordinary size, jars with a medium-sized opening, bowls, two-pint bottles with long necks, pots or jugs for containing bear's oil, which hold as much as forty pints, and finally plates and dishes in the French fashion."¹

Vessels were certainly made in great numbers by the Natchez and other tribes within our period, and it is reasonable to suppose that they belonged to the great group under discussion. If not, it will be necessary to seek the cause of their total disappearance, since, as I have already said, the pottery of this district, as shown by the relics, is practically a unit.

The introduction of metal utensils was a death-blow to the native industry, although some of the southern tribes, the Cherokees, for example, seem to have practiced the art continuously, in a very limited way, down to the present time. There is but little evidence of the influence of the art of the whites upon the ceramic products of this province, although the forms are sometimes thought to be suggestive of European models. It is certain, however, that the art had reached its highest stage without the aid of civilized hands, and in the study of its many interesting features we can feel assured that we are dealing with purely aboriginal ideas.

The pottery of this province is remarkably homogeneous in character, and we are warranted in assigning it to a single period of culture, and, in concluding, that the peoples who developed and practiced the art belonged to a group of closely-allied tribes. We can also state without fear of precipitating a controversy that the people who made this pottery were "mound-builders." At the same time, they were not necessarily of the same people as the builders of the mounds of Wisconsin, Ohio, or Georgia or contemporaneous with them.

USE.—It is difficult to determine the functions of the various forms of vessels. We are safe in stating that in very primitive times nearly all were intended for use in the domestic arts, and that as time went on uses were differentiated—form, as a consequence, undergoing many changes. Early writers on the Southern States mention a number of ordinary uses, such as cooking, the carrying and boiling of water, the manufacture of sugar and salt, and the preservation of honey, oil, and paint.

Only a small percentage of the vessels, and these generally of the pot-shaped variety, show indications of use over fire. It is well known

¹ Du Pratz: *Histoire de la Louisiane*, Vol. II, p. 179.

that with most peoples particular forms were devoted to especial ceremonial uses. The construction of vases exclusively for mortuary purposes was probably not generally practiced, although a few examples, notably those illustrated in Figs. 372 and 420, point decidedly in this direction.

The simple conditions of life with these people are indicated by the absence of certain forms. Lamps, whistles, toys, bricks, tiles, and other articles in common use with many barbaric nations, are not found in this province. Pipes, so neatly shaped by other mound-building peoples, are here of a very rude character, a point indicating decided distinctions between the tribes of this province and those of neighboring sections.

CONSTRUCTION.—The methods of manufacture have evidently been of a primitive character. The wheel or lathe has not been used. At the advent of the whites, the natives were observed to build their vessels by a process known as "coiling," and by modeling over gourds, and over blocks of wood and masses of indurated clay shaped for the purpose.

It is probable that in many cases the support was not a mold in the ordinary sense, but was simply a rounded object of small size held in one hand while the base of the vessel was formed over it by the other. Rounded pebbles, or the mushroom-shaped objects of clay sometimes found in the mounds, would have served the purpose perfectly. Trowels, paddles, stamps, polishing-stones, and other implements were used in finishing.

Baskets were also used as molds, and pliable fabrics, such as nets and coarse cloths, were employed in some sections. The methods of baking have apparently not been described in much detail by early writers, but the ware itself bears the marks of those simple processes known to our modern tribes. It is highly probable that the work was done by the women, and that each community had its skilled potters, who built and baked the ware in the open air, going through those simple mummeries that accompany the work among most primitive peoples.

MATERIAL.—The material employed was usually a moderately fine-grained clay, tempered, in a great majority of cases, with pulverized shells. The shells used were doubtless obtained from the neighboring rivers. In many of the vessels the particles are large, measuring as much as one-fourth or even one-half of an inch in width, but in the more elegant vases the shell has been reduced to a fine powder. Powdered potsherds were also used. The clay was, apparently, often impure or loamy. It was, probably, at times, obtained from recent alluvial deposits of the bayous—the sediment of overflows—as was the potter's clay of the Nile. There is no reason for believing that the finer processes of powdering and levigation were known. A slip or wash of very finely comminuted clay was sometimes applied to the surface of the vessel. The walls of the vessels are often thick and un-

even, and are always quite porous, a feature of no little importance in the storage of drinking-water, but one resulting from accident rather than from design.

COLOR.—The paste of this ware presents two marked varieties of color, a dark and a light hue. In a majority of cases it is dark, ranging from a rich black to all shades of brown and gray. The lighter tints are usually warm ochrey grays, rarely approaching reddish or terracotta hues. It is highly probable that the differences of color were, to some extent, intentionally produced, and that the material or methods of firing were regulated in a way to produce one tint or another at pleasure. This theory is confirmed by the fact that certain forms of vases are pretty generally dark, while certain other forms are as uniformly light—the latter in nearly all cases being used for the application of color, or of designs in color.

FORM.—This ware exhibits a great variety of forms, many of which are extremely pleasing. In this respect it is far superior to the other prehistoric groups of the eastern United States. The shapes are as varied and elegant as those of the ancient Pueblo pottery, but are inferior to those of Mexico, Central America, and Peru. They take a higher rank than the prehistoric wares of central and northern Europe, but as a matter of course lack the symmetry and refinement of outline that characterize the wheel-made wares of Mediterranean countries.

As I classify by form farther on, and discuss the origin of form as each form-group is presented, I shall not make further reference to this topic here.

FINISH.—The finish, as compared with the work of civilized nations, is rude. The surface is often simply hand or trowel smoothed. Generally, however, it was more or less carefully polished by rubbing with an implement of stone, shell, bone, or other suitable substance, the markings of these tools being distinctly visible. Nothing resembling a glaze has been found on pieces known to be ancient. The surface was sometimes washed or coated with a slip or film of fine clay which facilitated the polishing, and in very many cases a coat of thick red ochre was applied.

ORNAMENT.—The ancient potter of the middle province has taken especial delight in the embellishment of his wares, and the devices used are varied and interesting. They include, first, fanciful modifications of form; second, relief ornament; third, intaglio figures; and, fourth, designs in color.

Modification of shape.—It can hardly be claimed that the ancient peoples of this region had a very refined appreciation of elegance of outline, yet the simple, essential forms of cups and pots were by no means satisfactory to them. There are many modifications of shape that indicate a taste for higher types of beauty, and a constant attempt to realize them. The æsthetic sentiment was considerably developed.

There is also a decided tendency toward the grotesque. To such an extreme have the dictates of fancy been followed, in this respect, that utility, the true office of the utensil, has often taken a secondary place, although it is never lost sight of entirely. Bowls have been fashioned into the shapes of birds, fishes, and reptiles, and vases and bottles into a multitude of animal and vegetable forms without apparent regard to convenience. All of these modifications of essential forms were doubtless looked upon as, in a sense, ornamental. So far as I can determine they were in no case intended to be humorous.

Relief ornament.—Decorative ideas of a purely conventional character are often worked out in both low and salient relief. This is generally accomplished by the addition of nodes and fillets of clay to the plain surfaces of the vessel. Fillets are applied in various ways over the body, forming horizontal, oblique, and vertical bands or ribs. When placed about the rim or base, these fillets are often indented with the finger or an implement in a way to imitate, rudely, a heavy twisted cord—a feature evidently borrowed from basketry. Nodes are likewise attached in various ways to the neck and body of the vessel. In some cases the entire surface of the larger vessels is varied by pinching up small bits of the clay between the nails of the fingers and thumb. An implement is sometimes used to produce a similar result.

Intaglio designs.—The æsthetic tendencies of these potters are well shown by their essays in engraving. They worked with points upon both the plastic and the sun-dried clay, as well as at times upon the fire-baked surface. Figures thus produced exhibit a wide range of artistic achievement. They illustrate all stages of progress from the most archaic type of ornament—the use of dots and straight lines—to the most elegant combinations of curves; and, finally, to the delineation of life forms and fanciful conceptions.

Generally, when a blunt implement is employed, the line is produced by a movement that I shall call *trailing*, in contradistinction to *incision*, in which a sharp point is used, and *excision* or *excavation*, which is more easily accomplished with the end of a hollow reed or bone. *Impressed* or *stamped* ornament is of rare occurrence, and anything like *repoussée* work is practically unknown. The practice of impressing cords and fabrics was common among many of the northern tribes, and nets have been used in the manufacture and ornamentation of vases at many points within this province. The use of stamps, especially prepared, was in vogue in most of the Gulf States, and to a limited extent in northern localities.

Designs in color.—The colors used in painting are white, red, brown, and black, and have generally consisted of thick, opaque, clayey paste, white or colored with ochers. Occasionally the colors used seem to have been mere stains. All were probably laid on with coarse brushes of hair, feathers, or vegetable fiber. The figures are in most cases sim-

ple, and are applied in broad, bold lines, indicative of a strong talent for decoration. The forms are, to a great extent, curvilinear, and embrace meanders, scrolls, circles, and combinations and groupings of curved lines in great variety. Of rectilinear forms, lozenges, guilloches, zigzags, and checkers are best known.

The decided prevalence of curved forms is worthy of remark. With all their fertility of invention, the inhabitants of this valley seem never to have achieved the rectangular linked meander, or anything more nearly approaching it than the current scroll or the angular guilloche, while other peoples, such as the Pueblos of the Southwest and the ancient nations of Mexico and Peru found in it a chief resource. The reasons for this, as well as for other peculiarities of the decorative art of the mound-builders as embodied in pottery, must be sought for in the antecedent and coëxistent arts of these tribes. These peoples were certainly not highly accomplished in the textile arts, nor had they felt the influence of advanced architecture such as that of Mexico. The influence of such arts inevitably gives rise to angular geometric figures. Taken as a whole, the remains of the mound-builders would seem to point to a hyperborean origin for both the people and their arts.

The origin of decorative ideas, the processes by which they are acquired by the various arts, and their subsequent mutations of form and significance are matters of the greatest interest, and a separate paper will be devoted to their consideration.

CLASSIFICATION OF FORMS.—Form cannot be made a satisfactory basis of classification, yet within a given group of products, defined by general characters, a classification by shape will be found to facilitate description. In making such a classification we must distinguish essential from non-essential features, that is to say, for example, that bowls must be placed with bowls, bottles with bottles, etc., disregarding the various fanciful modifications given to rims, necks, and bodies for the sake of embellishment. To recognize these adventitious features, which are almost infinite in variety, would be to greatly embarrass form classification.

There is also another difficulty in the employment of form in classification—the nomenclature is very imperfect. We cannot use Greek names, as our forms correspond in a very few instances only with the highly developed forms known to classic art. Our own plain terms, although defective, are better and far more appropriate. All necessary correlations of form can readily be made when the comparative study of the pottery of the world is undertaken.

If we take a full set of these primitive vessels and arrange them in the order of increasing complexity we have an unbroken series ranging from the simplest cup to the high-necked bottle with perforated foot or with tripod. A partial series is shown in the upper line, Fig 361. A

multitude of variations from these outlines are found, a few of which are suggested in the lower line.

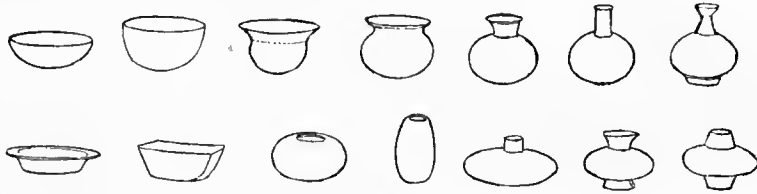


FIG. 361.—Scale of forms.

Compound, eccentric, and life forms are given elsewhere.

In deciding upon the order of arrangement for the various form groups, I shall be governed by what appears to be the natural order of evolution—a progress from simple to complex. First then we have basin-like vessels, such as *dishes*, *cups*, and *bowls*. Second, vases with wide mouths and somewhat globular bodies, the larger of which would be very generally recognized as *pots*. Third, vases with full bodies and narrow mouths, such as are often termed *jars*, but which are as properly called bottles. Fourth, vessels with high, narrow necks, universally denominated *bottles*. Vessels that cannot be grouped with either of these classes will have to be described in sub-groups, arranged in the order of their complexity or importance.

ORIGIN OF FORM.—The derivation and subsequent mutations of form will be treated somewhat in detail as the various forms come up, and a subsequent paper will dwell upon the topic at considerable length.

BOWLS.

Basin or bowl-shaped vessels exhibit great diversity of shape and ornament. In size they range from less than one inch in diameter and depth to more than twenty inches in diameter and a foot in depth. In color and finish they are uniform with vessels of the other classes. Their uses were doubtless chiefly domestic.

FORM.—The forms are greatly varied, as will be seen in Fig. 362. Many are simply segments of spheres and vary from a shallow saucer to a hollow perforated globe. Others have elongated, compressed, or



FIG. 362.—Forms of bowls.

conical bodies, with round or flattened bases. Rectangular and irregular forms are sometimes found. Stands and legs are but rarely attached, and handles, excepting those of a grotesque character, are exceptional.

It will probably be safe to assume that some form of shallow vessel—a dish, cup, or bowl, was the first artificial form produced. Such a vessel would be most easily fashioned in clay and may have been suggested by accident, or by natural or artificial vessels.

Whatever the origin or whichever the method of construction, the difficulties encountered would at first prevent the manufacture of other than the simplest forms.

ORNAMENT.—The ornamentation of bowls was accomplished in a variety of ways. These have been already described in a general way, under the head of ornament. Rim modifications constitute an important feature. The margin or lip may be square, oblique, round, or grooved, as indicated in Fig. 363 *a, b, c, and d*. The scallop may be employed as in *e* and *f*, and relief ornament may be added, such as fillets and nodes, and various horizontal projections, as shown in the

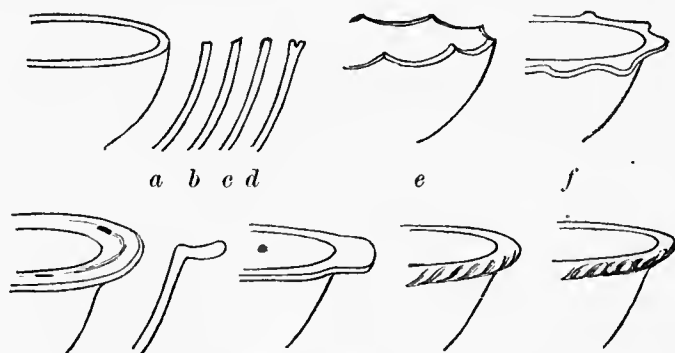


FIG. 363.—Modification of rims.

second line, Fig. 363, to say nothing of incised lines and indentations, which are the heritage of wicker-work.

Not satisfied with these simple ideas of decoration, the fancy of the potter led him to add embellishments of most varied and often of extraordinary character. The nodes and ridges have been enlarged and prolonged, and fashioned into a thousand natural and fanciful forms. Shells, fish, birds, beasts, human and impossible creatures have been utilized in a multitude of ways. Many illustrations of these are given on subsequent pages.

The body of the bowl is somewhat less profusely ornamented than the rim. The interior, as well as the exterior, has received painted, relieved, and intaglio designs. In the painted ones the favorite idea for the interior is a series of volutes, in broad lines, radiating from the center of the basin. Groups of festooned lines, either painted or engraved, and arranged to give the effect of imbricate scales, form also a favorite motive. The exterior surface of the incurved rims of globular vessels offers a tempting surface to the artist and is often tastefully decorated in all the styles.

ILLUSTRATIONS.—*Ordinary forms.*—I have not thought it necessary to present many cuts of simple undecorated vessels, as their shapes are repeated numberless times in elaborated forms. The crude examples teach nothing as to stage of culture. They are of the same time and people as the finer specimens.

The small bowl given in Fig. 364 is unusually well made, and is peculiar in having its interior surface decorated with a rather chaste in-



FIG. 364.—Bowl: Arkansas.— $\frac{1}{2}$.

cised design consisting of festooned lines. This was a favorite idea with the ancient potters and may be seen on both exterior and interior surfaces of a variety of vessels. The rim is beveled on the inner edge and has a beaded or indented fillet encircling the outer margin. The bottom is somewhat flattened. This specimen is from Arkansas.

In Fig. 365 we have a good example of the dark, nicely-finished ware of Arkansas. The widely expanding rim is neatly scalloped on the

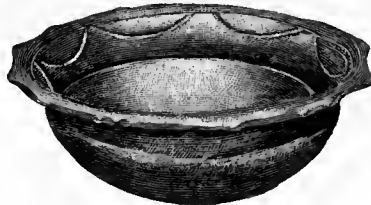


FIG. 365.—Bowl: Arkansas.— $\frac{1}{2}$.

margin and is finished on the inside with a pattern of incised lines. These lines appear to have been engraved in the hardened clay. The form is rendered graceful by a shallow encircling depression or groove at the base of the rim. The bottom is somewhat flattened.

Occasionally we find very deep bowls with sloping sides and flat bottoms resembling our common flower pots. One example from Arkansas is seven inches in diameter at the top and four at the base, and five inches deep. A heavy band of clay has been added to the outer margin of the rim, leaving a channel above and beneath. A number of perforations occur in this rim, as if made for the passage of thongs or filaments. A similar specimen of larger dimensions may be seen in the National Museum.

We have a number of bowls with incurved rims. This form is more characteristic of the south and is common along the Gulf coast.

A very small example is shown in Fig. 366. The lower part of the body is nearly hemispherical while the rim contracts slightly, giving a rather graceful outline. The exterior is embellished with a simple fig-



FIG. 366.—Cup: Arkansas.— $\frac{1}{2}$.

ure consisting of four linked scrolls which have been traced with a blunt point in the moist clay.

A much larger vessel resembling the above in shape is given in Fig. 367. It is of the dark brownish shell-tempered ware, characteristic of Arkansas. The lip is much incurved and the base considerably flattened, so that the form is that of a greatly compressed oblate spheroid.



FIG. 367.—Bowl: Arkansas. (?)— $\frac{1}{2}$.

The outer surface has been moderately well polished, and is ornamented in a very effective manner by a series of figures, outlined by incised lines, alternate spaces being filled in with minute punctures.

A favorite form is a bowl with full deep body and incurved lip. A vessel of this class is illustrated in Fig. 368. The rim is but slightly incurved, while the body is considerably constricted below the greatest circumference. It is a unique and handsome specimen. The color of the slip is a pale, reddish-gray, a little darker than an ordinary flesh tint. The paste is seen to be yellowish where the surface has been injured. The ornament is a simple meander, consisting of three incised lines. It is said to have been found in Arkansas. Other bowls of like form and of elegant finish are found in the collection. They are generally dark in color, and have large apertures, low walls and flattened bases. The meander, mostly in its more simple forms, is the favorite decoration.

There are many red vessels of the class under consideration, but the majority are less contracted at the aperture and thus are somewhat pot-shaped. They are rather rudely constructed and finished, and but for the color, would seem to be intended for ordinary cooking purposes. I observe in a number of cases that circular medallion-like ornaments have been set around the rim. These are from one-half to one inch in diameter, and are generally perforated or punctured in two or three places,



FIG. 368.—Bowl: Arkansas.— $\frac{1}{2}$.

apparently with the idea of representing a face. The effect is very much like that of the small perforated disks, riveted upon the exterior of copper or tin kettles for the purpose of attaching handles. Occasionally a tail-like appendage is added to the under side of these discoidal heads, suggesting the tadpole figures upon the sacred water vessels of the Pueblo Indians.

One large basin with slightly incurved rim has a series of triangular figures in red and brown upon both the inner and the outer surfaces. It is rudely finished and of large size, being eleven inches in diameter and seven and a half in height.

Eccentric forms.—Before proceeding with the discussion of life-forms as exhibited in bowls, I must present a few unique shapes.

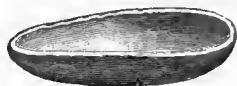


FIG. 369.



FIG. 370.

Cups: Arkansas (?).— $\frac{1}{2}$.

These consist of ladle-shaped vessels, and of bowls or basins with rectangular, oval, or unsymmetrical outlines. Ladles are of rare occurrence. In the Third Annual Report of the Bureau of Ethnology I have illustrated the best example that has come to my notice. The Davenport collection contains but one specimen—a rude shallow cup with a short thick handle. The form suggests the wooden and horn spoons of the modern tribes and may have originated in their archaic prototypes.

Fig. 369 illustrates a minute cup rudely made of coarse clay. The outline is oval and slightly pointed at one end, as if intended for pouring liquids.

In Fig. 370 we have another small vessel of rude finish with two pointed lips. A much larger vessel of similar shape may be seen in the Davenport collection. The projecting pointed lip is rarely found in aboriginal pottery, although I see no reason why such a feature may not readily have been suggested to the savage by the prolonged margins of his vessels of shell.

Rectangular vessels are of the rude shell-tempered ware, and, although rare, are widely distributed.

Fig. 371 illustrates a specimen from Pecan Point, Arkansas. The surface is rudely finished and without polish. The color is a dark gray, much flecked with large particles of white shell. Another example has

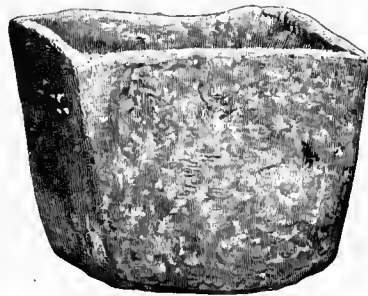


FIG. 371.—Rectangular bowl: Pecan Point, Arkansas.— $\frac{1}{2}$.

a square rim but a rounded bottom, and is covered with a coat or slip of dark red clay.

A small vessel from the same region as the preceding has the rim pressed in on the four sides, leaving sharp, projecting corners.

One of the most notable vessels in the collection is illustrated in Fig. 372. It is a heavy casket consisting of two parts, body and lid, and is made as usual of clay and coarsely pulverized shell. It is brownish gray in color and bears some marks of the baking. It was obtained by Captain W. P. Hall from a low mound at Hale's Point, Tennessee, and is described by Mr. W. H. Pratt, in the following language: "It is of rude, irregular, quadrangular form, made in two parts. The lower, or case proper, is 12 inches long, 7 inches wide, and 5 inches deep, inside measure, the upper edge being slightly bent inward all around. The upper part or lid is of similar form and dimensions, being very slightly larger, so as to close down over the other part, about one and a half inches, and is somewhat more shallow. As the lid does not fit very perfectly, the joint around the edge had been plastered up with clay. When found, it contained the remains of a very small child reduced to dust, except that some of the bones of the skull, jaws, and limbs retained

their form, crumbling rapidly, however, upon removal and exposure to the air. There were also found two or three dozen small shell beads. Excepting the remains described, the case was entirely empty. The case weighs six and a quarter, and the lid just six pounds." This is one of the very few vessels that would seem to have been constructed especially for mortuary purposes.

I wish to add to the list of eccentric forms a singular example from the collection of J. R. Thibault, of Little Rock, Arkansas. As shown in Fig. 373 it is an oblong, trough-like vessel with flat projecting wings at the ends. It is extremely well-finished, with thin walls, symmetrical form, and high polish. The color is quite dark and the material is as usual. The engraved design consists of incised lines, which form a



FIG. 372.—Burial casket: Hale's Point, Tennessee.—4.

number of rectangular compartments extending around the exterior surface of the body. The wings are perforated. The form of this vessel suggests the wooden trays of some modern tribes. A similar example, which is illustrated in the Third Annual Report of the Bureau of Ethnology, is of much inferior interest, being plain and rude.

Life forms.—A very large percentage of the bowls of this district are modified in such a way as to resemble, more or less closely, the form of some living creature—bird, beast, or reptile. Especial attention has been given to the heads. These are modeled in the round and attached to the rim or side, while other parts of the animal appear upon different portions of the vessel.

It will be difficult to determine the origin of this curious practice. We shall not be able to say that it came from the elaboration of handles, simply to please fancy, for the reason that vessels of this class are rarely known to have had simple handles; nor from the modification of simple ornaments, as such were but little used. It is still less probable that animal forms were first modeled independently, and afterwards changed in such a way as to serve as vessels. There are no examples of animal forms in clay independent of vessels. It would not be consistent with primitive methods of procedure to copy nature direct, at least until some mystic significance had become attached to the form employed. It is possible, however, that the origin of this practice is not to be found within the plastic art itself, but in the shapes of antecedent and co-existent vessels of other materials in which life forms had been employed; or in the use of natural objects themselves as utensils, the original forms not having been lost sight of and having in time suggested the employment of other natural forms. Examples of the latter class may be cited.



FIG. 373.—Trough-shaped vessel: Arkansas.—†

[National Museum.]

Shells were primitive vessels. The hard cases of seeds and fruits were also much used. These were doubtless antecedent to vessels of clay. They were the natural models for the potter, the carver in wood or stone, and their employment as such served to lead up gradually to a more realistic and general use of natural shapes in works of art to which they were not essential features. The importance of the various animal forms was increased by their association with religious ideas. Nearly all the vessels of this class presented in the following illustrations come from the vicinity of Pecan Point, Arkansas.

Clay vessels imitating both marine and fresh-water shells are occasionally obtained from the mounds and graves of the Mississippi Valley. The conch shell appears to have been a favorite model, especially in its modified form, Fig. 374, *a* and *b*. The clam shell is also imitated in *c* and *d*. The more conventional forms of these vessels are exceedingly interesting, as they point out the tendencies and possibilities of modification. An instructive example illustrated in *e* has four groups of nodes,

each consisting of a large central node with four or five smaller ones, surrounding it, set about the rim, the conception being that of four shells joined in one vessel, with the noded apexes turned outward and the bases inward.

A still more highly conventionalized form is shown in *f*. The cup is unsymmetrical in outline, and has a few imperfect nodes near one cor-

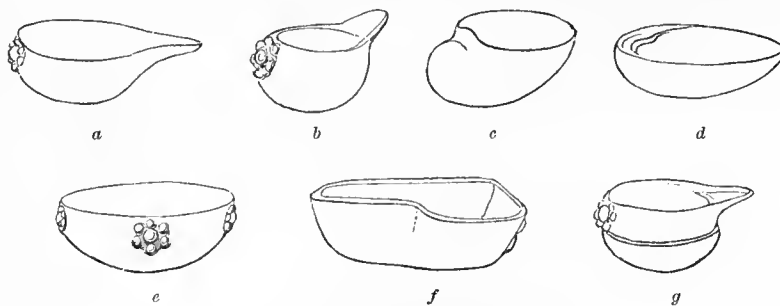


FIG. 374.—Clay vessels imitating shells.

ner, but its resemblance to a shell would hardly be recognized by one unacquainted with more realistic renderings of like subjects. In *g* we have an imitation of a shell cup placed within a plain cup.

A very good illustration of this class of vessel is given in Fig. 375. It is evidently intended to imitate a trimmed conch shell. The apex and a few of the surrounding nodes are shown at the right, while the base or spine forms a projecting lip at the left. A coil of clay forms the apex. This

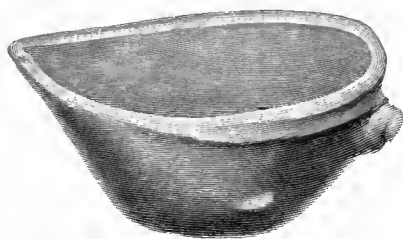


FIG. 375.—Bowl imitating a modified conch shell.— $\frac{1}{2}$.

is carried outward in a sinistral spiral to the noded shoulder. We have here a suggestion of the origin of a favorite decorative motive, the scroll, a clew, however, which the paucity of examples makes it difficult to follow up satisfactorily.

Although we may not be able to arrive at any definite conclusion in regard to the origin and significance of the practice of modeling life forms in clay, we are certain of one thing, that it became an important feature in the potter's art, and that in due course of time the practice broke loose from the restraints of birth and tradition and asserted its

freedom in the production of any form that superstition or fancy happened to select.

The artist probably did not follow nature with great accuracy in all the details of species and varieties, but some definite model must have been



FIG. 376.—Frog-shaped bowl: Craigshead Point, Arkansas.— $\frac{1}{2}$

in view, in nearly all cases, and such characters as came to be regarded as essential to that creature were never lost sight of, consistency



FIG. 377.—Frog-shaped bowl: Pocan Point, Arkansas.— $\frac{1}{2}$.

being a most notable characteristic of the art of a savage or barbaric people.



FIG. 378.—Animal-shaped bowl: Arkansas.— $\frac{1}{2}$.

The sun-fish was a favorite model, but its form was generally employed in vessels with upright necks. A number of examples occur

in the next section. Of reptilian forms the frog seems to have been the favorite.

Few examples occur, however, in the shallower vessels. In the bowl illustrated in Fig. 376, the various members of the body are boldly



FIG. 379.—Bird-shaped bowl: Arkansas.— $\frac{1}{2}$.



FIG. 380.—Bird-shaped bowl: Arkansas.— $\frac{1}{2}$.

modeled, and appear about the most expanded portion of the vessel. The rim is ornamented with a series of notches, and two small loops connect the rim with the head and tail of the creature. The legs are characteristic, and the long toes extend beneath the body. The bottom

of the vessel is flat. The make and finish are as usual, but the surface has been painted red. A similar vessel is shown in Fig. 377, the view being taken from the front. It is well polished and has a rounded bottom. The color is dark.



FIG. 381.—Bird-shaped bowl: Arkansas.— $\frac{1}{3}$.

Another remarkable example of this use of animal forms is seen in the vessel presented in Fig. 378. A deep globular bowl of dark, well-polished ware is made to represent the head of an animal. A long snout, with teeth and nostrils and accompanied by a pair of knobs



FIG. 382.—Bowl with grotesque heads: Arkansas.— $\frac{1}{3}$.

for eyes, embellishes the right side—as seen in the cut—ears appear at the front and back, and a circular node standing, perhaps, for the severed neck, is placed at the left. The head has a decidedly porcine look, yet it may have been intended for a raccoon or an opossum.

Fig. 379 illustrates a large shallow bowl or pan of ordinary form and finish. The head of a bird resembling a turkey is attached to one side, with the bill turned inward. On the opposite side there is a small handle-like projection that represents the bird's tail.

A vessel of somewhat extraordinary form is shown in Fig. 380. The bowl is smaller and deeper than the last, and serves as the body of a bird, the head and tail of which are of unusual proportions. The neck is very long and thick and is gracefully curved, but the head is not modeled with sufficient care to make apparent the species intended.

The vessel shown in Fig. 381 is also finished in imitation of a bird. In this case the bird is placed upon its back, the neck and head being looped up to form a sort of handle on one side, while the legs answer a like purpose on the opposite side. The wings are represented by a number of lines rudely engraved upon the sides of the vessel. The resemblance of this bowl to the wooden basins made by Northwest Coast Indians is very striking.

The vessel shown in Fig. 382 is one of the most unique yet brought to light. It is a heavy, rather rudely finished bowl, to the rim of which two grotesque heads, apparently of nondescript character, have been attached. One resembles the oft-occurring plumed serpent of aboriginal American art in a number of its characters. The other has a double comb somewhat resembling that of a domestic fowl. No description can convey as clear a conception of these monstrosities as the accompanying illustration.



FIG. 383.—Heads of birds.

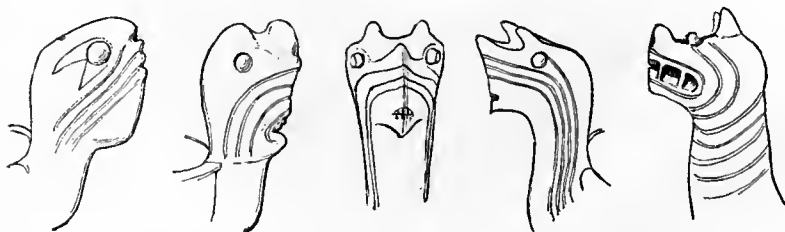


FIG. 384.—Grotesque heads.

A good degree of skill is shown in the modeling of varieties of birds. A fair idea of the accuracy of these potters in this direction will be conveyed by the series of heads shown in Fig. 383. Several species of

ducks are apparently differentiated, one of which, resembling the summer duck closely, is given in *a*, while the head given in *b*, although possibly also intended for a duck, is much like a grouse or partridge. The pigeon or dove is seen in *c*, the vulture or eagle in *d*, and the owl in *e*.



FIG. 385.—Bowl with grotesque head: Pecan Point, Arkansas.— $\frac{1}{2}$.

It would be difficult to imagine more grotesque and outlandish heads than those attached to the bowls illustrated in Figs. 385 and 386. The vessels themselves are of the usual type, rudely modeled and finished



FIG. 386.—Bowl with grotesque head: Pecan Point, Arkansas.— $\frac{1}{2}$.

and very heavy. The first is dark in color, the other red. The strange animal here represented is certainly not a close copy of anything in

nature. It is characterized by upright ears, a high bulbous snout and a grinning mouth. The teeth in some cases resemble the fangs of a serpent. The eyes consist of rounded nodes; and often curved lines,



FIG. 387.—Bowl with grotesque handle: Scanlon's Landing, Arkansas.— $\frac{1}{2}$.

incised or in relief, extend from them or the mouth down the sides of the neck. The tail at the opposite end of the vessel is turned upward



FIG. 388.—Animal-shaped bowl: Arkansas.— $\frac{1}{2}$.

and coiled. The type specimens of this form are from Pecan Point, Arkansas.

The peculiar character of this class of heads is well shown in the series given in Fig. 384. My observations have led me to suspect that they may be the result of attempts to model in clay the mythical plumed serpent which is so graphically delineated in the engraving upon the little vase shown in Fig. 407. The fact that in one case legs have been added to the base of the body militates against this theory. Their resemblance to the gargoyle heads of mediæval architecture suggests the possibility of early European influence.

If possible, a still more novel conceit is embodied in the handle of the vessel shown in Fig. 387. It can be likened to nothing in nature more readily than to the antler of an elk. This vessel is of a dark brownish color, and is but slightly polished. A duplicate specimen of inferior size and finish has recently been added to the National Museum from a grave at Pecan Point.

Similar to the preceding in general appearance are a number of bowls or deep pans, embellished with the heads of animals. A very good example is given in Fig. 388. The head has a decided resemblance to that of a female deer or fawn. The tail appears upon the opposite side of the basin, and is pendant, as in nature. Legs have been added to the base of the bowl; these terminate beneath the body in cloven hoofs.

The small bowl, shown in Fig. 389, is nearly hemispherical in shape.



FIG. 389.—Animal-shaped bowl: Arkansas.—j.

A small head, representing some animal, has been attached to the rim. The exterior surface is covered with a number of groups of roughly-worked concentric ridges, which may be meant to imitate hair. These ridges have apparently been made by pinching up the clay between the nails of the fingers and thumb. Figures of similar form are generally incised. This vessel is probably from the vicinity of Pecan Point.

The creature represented by the head, shown in Fig. 390, would not be recognized from the cut, or perhaps not even with certainty from any single specimen, but with a number of examples in view, there need be no hesitation. The animal intended is a bat. In a number of features the likeness is striking. The high top head, the angular ears, and the small eyes crowded down upon the mouth are characteristic.

The tail is flat, curved a little upward, and ridged along the middle in imitation of the attenuated caudal column. The general consistency of this work is demonstrated by the fact that this particular form of tail accompanies this form of head in all cases, and is not associated



FIG. 390.—Bowl with bat's head: Pecan Point, Arkansas.— $\frac{1}{2}$.

with any other. The face of the bat is always turned toward the vessel; in imitation of other varieties of animals, it is nearly always turned out.

In one case, Fig. 391, we have, what appears to be, a human head attached to the side of the bowl. This head is furnished with a tri-



FIG. 391.—Bowl: Arkansas.— $\frac{1}{2}$.

angular crest, notched on the edges, and enlarged at the top. The case is a perplexing one, especially as a tail like that attached to the bird bowls occurs on the side opposite the head.

POT-SHAPED VESSELS.

There is no hard line of demarkation between the class of vessels now to be considered and those already described. The distinction is made chiefly for convenience of treatment.

MATERIAL, ETC.—As a rule, pot-shaped vessels are of coarser materials and of ruder finish than other forms, indicating, perhaps, their exclusive relegation to the culinary arts, where nice finish was not essential. In many cases they show use over fire.

In size, they have a wide range. The larger are often as much as fifteen inches in diameter, and twenty in height. There are a score or more of very large size in the Davenport museum.

FORM.—The form characteristics are a full globular body—sometimes elongated, sometimes compressed vertically—a low neck, and a wide aperture. The bottom is very generally rounded. A few of the form modifications are shown in Fig. 392. The rim or neck is always short,



FIG. 392.—Forms of pots.

and is upright or slightly recurved. Many vessels resembling the shapes here presented are placed with the succeeding group, as they appear to be functionally distinct from this. There are no examples with legs or stands.

HANDLES.—Looped handles are confined almost wholly to this class of vessels. They are generally ranged about the rim or neck. In a majority of cases there are four handles to a vessel. We rarely find less than that number, but often more. It is a usual thing to see fifteen or twenty handles set about the rim. Originally the handles may have been exclusively functional in character; they were so at least in antecedent forms. These potters have certainly, at times, employed them for purposes of embellishment. In some cases they are too fragile for use, in others they are flattened out against the neck of the vessel and united with it throughout their whole length. Again, they have degenerated into mere ridges, notched and otherwise modified to suit the fancy. In many instances their place is taken by incised lines or indentations which form effective and appropriate ornamental figures. A series of vessels showing gradations from perfect handles to their atrophied representatives is shown in Fig. 393.

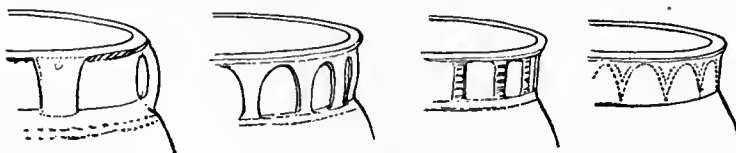


FIG. 393.—Handles.

ORIGIN OF HANDLES.—Handles were doubtless originally attached to facilitate the suspension and handling of vessels and other articles. They probably had their typical development in basketry, and there

are good reasons for supposing that certain forms of the handles upon pottery owe their existence to contact with the sister art. This idea is confirmed by their shapes, and by the fact that a large percentage of the pottery handles are useless as aids to suspension or transportation.

ORNAMENT.—Rim margins are modified for decorative purposes, very much as they are in bowls. See Fig. 363.

The bodies of these vessels are often elaborately ornamented, mostly by incised figures, but often by punctures, nodes and ribs. The incised lines are arranged principally in groups of straight lines forming angular figures—a very archaic style—and in groups of festooned lines so placed as to resemble scales. The punctures are made with a sharp point, and form encircling lines and various carelessly executed patterns. A rude sort of ornamentation is produced by pinching up the soft clay of the surface between the nails of the fingers and thumb. Relief ornament consists chiefly of applied fillets of clay, arranged to form vertical ribs. Rows of nodes are sometimes seen, and in a few cases the whole body is covered with rude nodes.

ILLUSTRATIONS.—The specimens selected for illustration are intended to epitomize the forms and decorations of a very great number of vessels, and are not always the most showy examples to be found.

A vessel of rather exceptional shape is given in Fig. 394. It could as well be classed with bowls as with pots. The ware is of the rude

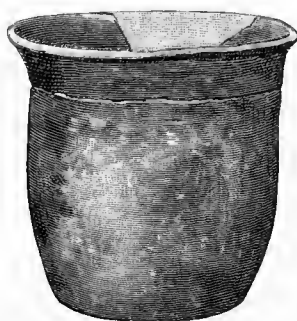


FIG. 394.—Pot: Arkansas (?).— $\frac{1}{2}$.

kind generally used over the fire. The body is high and cylindrical, the rim flaring, and the bottom quite flat. The form is suggestive of our domestic crockery.

Another bowl-like pot is illustrated in Fig. 395. It is of the dark, rudely hand-polished variety. The body is globular, the neck is very short and is ornamented with a dentate band. Below this are two pairs of perforations, probably used for suspending the vessel. There are a number of vessels of this variety, mostly smaller than the example given.

The vessel shown in Fig. 396 is still more pot-like. The neck is higher than the preceding and is slightly constricted. It is of very rude construction and finish. The rim is furnished with two small horizontal



FIG. 395.—Pot: Arkansas (?).— $\frac{1}{2}$.



FIG. 396.—Pot: Waverly, Tennessee.— $\frac{1}{2}$.

projections, and the body is somewhat obscurely lobed. It represents a very numerous class, especially plentiful in Southeast Missouri.

The little pot presented in Fig. 397 has the body covered with rude nodes. The neck is surrounded by a heavy fillet, notched obliquely in imitation of a twisted cord. Four rude handles have also been attached.



FIG. 397.—Pot: Arkansas (?).— $\frac{1}{2}$.



FIG. 398.—Pot: Arkansas.— $\frac{1}{2}$.

In Fig. 398 we have one of the rudest examples in the collection. The neck is furnished with four handles, which alternate with four vertical ribs. The body is misshapen and rough, and is ornamented with a series of nearly vertical ridges, a rather usual device, and one which is sometimes very neatly executed.

The body of the nicely finished pot shown in Fig. 399 is embellished with short, incised markings, arranged in vertical lines. The neck is furnished with a heavy indented band and four strong handles. The locality given is "Four-Mile Bayou, Alabama."

The specimen given in Fig. 400 illustrates the use of great numbers of handles. In this case there are sixteen. They are gracefully formed and add much to the appearance of the vessel, which is really a bowl with wide, flaring rim. In most of its characters it resembles the pots.

Another curious variation in the shape of handles is shown in the little cup given in Fig. 401. This can hardly be called a usual feature, although occurring in vessels of various localities. I have seen an ex-



FIG. 399.—Pot: Alabama (?).— $\frac{1}{2}$.



FIG. 400.—Pot: Arkansas (?).— $\frac{1}{2}$.

ample from the Missouri Valley in which a great number of perforated handles were set about the rim, and another in which there was a continuous, partially free, collar perforated at intervals. There is a specimen of this class in the Davenport Academy collection in which the flattened handles are so placed about the neck as to form a series of



FIG. 401.—Pot: Arkansas (?).— $\frac{1}{2}$.



FIG. 402.—Pot: Arkansas (?).— $\frac{1}{2}$.

arches. These, I take it, are partially atrophied forms. The body is ornamented by a scale-like pattern of incised lines—a favorite method of decoration with the ancient potter.

In Fig. 402 we have an illustration of total atrophy. The handles are represented by simple incised lines. There is no relief whatever. In many cases the form of the handles is shown in low relief, the outer surface being plain or ornamented with incised lines or punctures. The body of the vessel last mentioned is covered with rudely incised scroll designs.

Another good illustration of this class of vessels is shown in Fig. 403.

The cut is taken from my paper in the Third Annual Report of the Bureau of Ethnology. The handles are indicated by incised lines. The body was ornamented by pinching up the clay between the nails of the thumb and forefinger. Locality: Pecan Point, Arkansas.

A good example of the larger pots is illustrated in Fig. 404. It is engraved a little less than one-fourth the dimensions of the original.



FIG. 403.—Pot: Pecan Point, Arkansas.— $\frac{1}{4}$.
[National Museum]



FIG. 404.—Pot: Hale's Point, Tennessee.— $\frac{1}{4}$.

The height is seventeen inches and the greatest diameter eighteen inches. It is very well made. The walls are even and only moderately thick.

The dark, unpolished surface is profusely speckled with fragments of white shell. There are four wide, strong handles. The rim and neck are ornamented with encircling lines of finger-nail indentations.

A masterpiece of this class of work is shown in Fig. 405. It was ob-



FIG. 405.—Pot: Pecan Point, Arkansas.—J.

tained at Pecan Point. It is not quite symmetrical in form but is carefully finished. The color is gray, with mottlings of dark spots, the result of firing. The height is eleven inches, and the aperture is ten inches in diameter. There are ten strong, well-proportioned handles, each having a knob resembling a rivet head, near the upper end. The margin of the rim has a circle of indentations. There are a few red vessels of this shape which have figures of reptiles attached to the neck.

WIDE-MOUTHED BOTTLES OR JARS.

Vessels of this class were probably not devoted to the ordinary uses of cooking and serving food. They are handsome in shape, tasteful in decoration, and generally of small dimensions. They are found, as are all other forms, buried with the dead, placed by the head or feet, or within reach of the hands. Their appearance is not suggestive of their original office, as there is no indication of wear, or of use over fire.

FORM.—I include under this head a series of forms reaching from

the wide-mouthed pot to the well-developed bottle. They really correspond closely to the high-necked bottles in all respects save in height of neck, and the separation is therefore for convenience of treatment only. The following illustration (Fig. 406) will give a good idea of the forms included.



FIG. 406.—Forms of jar-shaped hottles.

There are also many eccentric and many extremely interesting life forms included in this group. A number of vases, modeled after the human head, are, by their general outline, properly included.

ORNAMENTATION.—The rims, bodies, and bases are embellished much after the fashion of the vessels already described, with the exception that handles or handle-like appendages or ornaments seldom appear. The painted designs are in one, two, or three colors, and the incised figures have been executed both in the soft and in the thoroughly dried clay.

The style of execution is often of a very high order, especially in some of the more southerly examples, a number of which are from the mounds of Mississippi and Louisiana. We note the fact that in a few of the designs there is a slight suggestion of Mexican forms.

In illustrating this group, I am compelled, for the want of space to omit many interesting examples. I present only such as seem to me especially instructive.

ILLUSTRATIONS.—*Ordinary forms.*—The vessel shown in Fig. 407 may be taken as a type of a very large class. It is most readily described as a short-necked, wide-mouthed bottle. It is symmetrical in shape



FIG. 407.—Bottle: Pecan Point, Arkansas.— $\frac{1}{2}$.

and very nicely finished. The lip is supplied with a narrow, horizontal rim. The body expands somewhat abruptly from the base of the up-

right neck to the squarish shoulder, and contracts below in an even curve, giving a hemispherical base. There are a multitude of variations from this outline, a few of which are suggested in Fig. 406. These vessels are nearly all of the dark, grayish-brown, fire-mottled ware. A few are yellowish, and such are often painted red or decorated with designs in red and white



FIG. 408.—Bottle: Arkansas.— $\frac{1}{2}$.

Two charming vases are shown in Figs. 408 and 409. The surface finish is in both cases very superior. The lines of the figures are carefully drawn, and seem to have been produced by the trailing, under even pressure, of a smooth rather blunt point. It is difficult to get so nicely finished and even a line by simple incision, or by excavating the clay. The design in Fig. 408 consists of eight groups of curved lines



FIG. 409.—Bottle: Arkansas.— $\frac{1}{2}$.

arranged in pairs, which are separated by plain vertical bands. It might be considered an interrupted or imperfectly connected form of the running scroll. This grouping of lines is frequently met with in the decorative designs of the Southern States. The design upon the other vase, Fig. 409, is still more characteristic of the South. It consists of an encircling row of round, shallow indentations, about which series

of incised scrolls are linked, and of two additional rows of depressions, one above and the other below, through which parallel lines are drawn.

Many other interesting illustrations of the simpler forms could be given, but nearly all are very similar in their more important features to the examples that precede or follow.

As skilled as these peoples were in modeling life forms, and in engraving geometric devices, they seem rarely to have attempted the linear representation of life forms. We have, however, two very good examples.

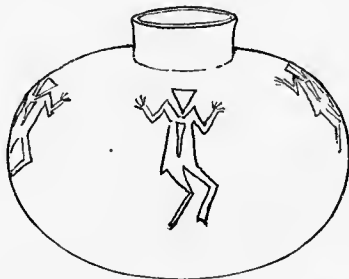


FIG. 410.—Engraved bottle: Arkansas.

The first of these is shown in outline in Fig. 410. It is a large bottle embellished with four rude drawings of the human figure, executed with a sharp point in the soft clay. Height of vessel, eight inches.

The work is characteristic of a very early stage of art. The figures could be duplicated in the work of the ancient Pnebls, and in the picto-



FIG. 411.—Engraved bottle: Arkansas.— $\frac{3}{4}$.

graphic art of many of our savage tribes. They are probably derived from symbolic art, and possibly relate to the guardians of the four points of the compass, or to some similar mythical characters.

The work upon the neat little bottle, presented in Fig. 411, is of the

same class as the above but of a much higher grade, both in execution and conception. The engraved design is one of the most remarkable ever obtained from the mounds. It consists of two winged and crested rattlesnakes, which encircle the most expanded part of the vessel, and of two sunflower-like figures, alternating with them. These designs are very carefully engraved with a needle-like point, and are adjusted to the form of the vase in a way that suggests forethought and an appreciation of the decorative value of the figures. By dint of rubbings, photographs and sketches, I have obtained the complete drawing of the various figures which are given in Fig. 412 on a scale of one-half the original.

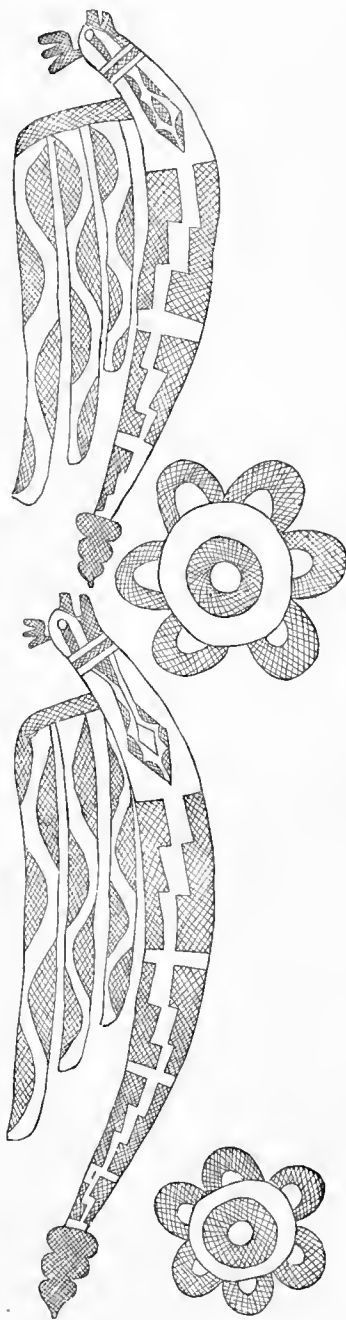


FIG. 412.—Engraved design— $\frac{1}{2}$.

The serpent, especially the rattlesnake, has always taken a leading place in the mythology and the art of the more cultured American races, and crests, plumes, and wings have often been considered its proper attributes. The conventional method of representation is also characteristically aboriginal. The plumes, the figure connected with the eye, the bands upon the neck, the stepped figures of the body, and the semi-circular patches on the wings are all characters that appear again and again in the ancient art of the United States. The peculiar emblematic treatment of the heart is almost universal in temperate North America. And just here I may be permitted to suggest that the remarkable feature of the great earth-work serpent of Adams county, Ohio, which has been regarded as the "symbolic egg," and which in its latest phase has become the issue of a frog and the prey of the serpent, is possibly intended for the heart of the serpent, the so-called frog being the head. The rosette figures are not often duplicated

in Indian art. There can be little doubt that the figures of this design are derived from mythology.

Eccentric forms.—A form of vessel of which civilized men make peculiar use is depicted in Fig. 413. There is a marked resemblance to a common tea-pot. A very few examples have been found, two of which are illustrated in the Third Annual Report of the Bureau of Ethnology. The specimen here given is well made and carefully finished.



FIG. 413.—Teapot-shaped vessel: Arkansas.— $\frac{1}{2}$.

The neck is low and wide, and the body is a compressed sphere. The spout is placed upon one side and a low knob upon the other. The absence of a handle for grasping indicates that the vessel was probably not intended for boiling water. These characters are uniform in all the specimens that have come to my notice. Two small circular depres-



FIG. 414.—Vessel of eccentric form: Arkansas.— $\frac{1}{2}$.

sions occur on the sides of the vessel alternating with the spout and the knob and with these features form centers for four rosettes of involute incised lines. The origin of this form of vessel is suggested by a fine red piece from "Mississippi," now in the national collection. The knob is the head of a turtle or other full-bodied reptile, and the spout takes the place of the creature's tail. Many of the animal-shaped vases would resemble this form closely if an opening were made through the top of the body and through the tail.

In connection with the teapot-like vessels it will be well to describe another novel form not wholly unlike them in appearance, an example

being shown in Fig. 414. The shoulder is elongated on opposite sides into two curved, horn-like cones, which give to the body a somewhat crescent-shaped outline. It is of the ordinary plain, dark ware, and has had a low stand or base which is now broken away.

The specimen given in Fig. 415 has been considerably mutilated, but evidently belongs to the same class as the preceding. It probably also



FIG. 415.—Vessel of eccentric form: Pecan Point, Arkansas.— $\frac{1}{2}$.

resembled the vessel which follows; it serves at least as a link between the two. The body is ornamented with carelessly drawn, deeply incised, involute designs.

Life forms.—A further elaboration of the preceding forms is illustrated in Fig. 416. On one side the conical projection is greatly elongated and fashioned to resemble the head of some grotesque beast, with horns,



FIG. 416.—Animal-shaped vase: Pecan Point, Arkansas.— $\frac{1}{2}$.

expanded nostrils, and grinning mouth. The opposite point is elongated and looped, forming a tail, while the base of the body is furnished with four feet. On the sides of the vessel are engraved figures, consisting of clusters of involute lines, as in the specimen just given. It is of the ordinary dark pottery, and was obtained at Pecan Point.

Equally noteworthy as plastic representations are the two examples that follow. The vessel shown in Fig. 417 is modeled in imitation of a sunfish. The body is much flattened and is neatly polished. The head is well modeled, as are also the fins and tail. Many examples of this form are found, some of which are elaborately treated, the scales being minutely shown. The body of the fish is sometimes placed in the nat-

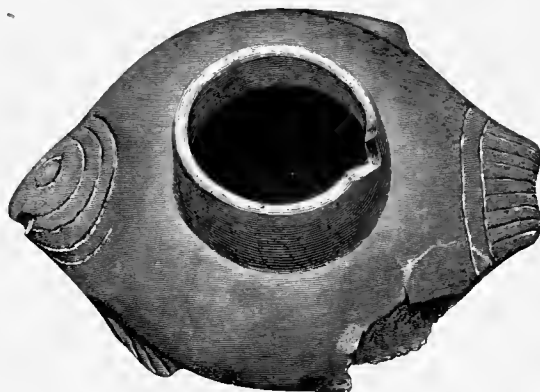


FIG. 417.—Sunfish vase: Arkansas.— $\frac{1}{2}$.

ural upright position, the neck of the vessel rising from the back, producing a lenticular shape.

The animal so carefully modeled in the vessel given in Fig. 418 resembles a raccoon or an opossum. The mouth of the vessel is wide and the neck upright and short. The body is ornamented with a pattern



FIG. 418.—Opossum vase: Arkansas.— $\frac{1}{2}$.

made up of triangular groups of incised lines, which may or may not be meant for hair.

The love of modeling life forms shows itself again in the little vase illustrated in Fig. 419. The head of some animal, rudely suggested, projects from one side, while a curved tail on the other carries out the

idea of the complete creature. The round body is decorated with broad vertical lines in dark red. A red line encircles the rim.



FIG. 419.—Animal-shaped vase: Arkansas.—J.

It is not strange that a people who had successfully engaged in the modeling of life forms, and especially the heads of animals, should attempt the human head. Their remarkable success in this direction is shown in a number of vases, one of which is given in Fig. 420. This and kindred peoples had made considerable progress in carving in stone and other materials, evincing a decided talent for sculpture; but clay is so much more readily manipulated than either wood, stone, or shell, that we are not surprised to find their best work in that material.

It is an interesting fact that with all this cleverness in the handling of clay, and in the delineation of varied models, the art had not freed itself from the parent stem—the vessel—and launched out into an independent field. In a few cases such an end seems to have been achieved by certain groups of mound builders, notably those whose works at Madisonville, Ohio, have recently been explored by Professor Putnam. Modeling in clay was probably confined to vessels for the reason that, through their humble agency, the art was developed.

Up to the present time I have met with but eight of these curious head-shaped vases. All were obtained from the vicinity of Pecan Point, Arkansas, and, like other vessels, have been associated with human remains in graves or mounds. It is true that in all cases the bones of the dead have not been found, but this only indicates their complete decay. The question as to whether or not these vases were made exclusively for sepulchral purposes must remain unanswered; there is no source of information upon the subject. Such a purpose is, however, suggested in this case by the semblance of death given to the faces.

The finest example yet found is shown in Fig. 420. In form it is a simple head, five inches in height and five inches wide from ear to ear. The aperture of the vase is in the crown, and is surrounded by a low, upright rim, slightly recurved. The cavity is roughly finished, and follows pretty closely the contour of the exterior surface, excepting in projecting features such as the ears, lips, and nose. The walls are generally

from one-eighth to one-fourth of an inch in thickness, the base being about three-eighths. The bottom is flat, and takes the level of the chin and jaws.

The material does not differ from that of the other vessels of the same locality. There is a large percentage of shell, some particles of which are quite large. The paste is yellowish gray in color and rather coarse in texture. The vase was modeled in the plain clay and permitted to harden before the devices were engraved. After this a thick film of fine yellowish-gray clay was applied to the face, partially filling up the engraved lines. The remainder of the surface, including the lips, received a thick coat of dark red paint. The whole surface was then highly polished.

The illustration will convey a more vivid conception of this striking head than any description that can be given. The face cannot be said



FIG. 420.—Head-shaped vase: Pecan Point, Arkansas.— $\frac{1}{2}$.

to have a single feature strongly characteristic of Indian physiognomy. We have instead the round forehead and the projecting mouth of the African. The nose, however, is small and the nostrils are narrow. The face would seem to be that of a youngish person, perhaps a female. The features are all well modeled, and are so decidedly individual in character that the artist must have had in his mind a pretty definite conception of the face to be produced as well as of the expression ap-

propriate to it, before beginning his work. It will be impossible, however, to prove that the portrait of a particular personage was intended. The closed eyes, the rather sunken nose, and the parted lips were certainly intended to give the effect of death. The ears are large, correctly placed, and well modeled; they are perforated all along the margin, thus revealing a practice of the people to whom they referred. The septum of the nose appears to have been pierced, and the horizontal depression across the upper lip may indicate the former presence of a suspended ornament.



FIG. 421.—The engraved figures.

Perhaps the most unique and striking feature is the pattern of incised lines that covers the greater part of the face. The lines are deeply engraved and somewhat "scratchy," and were apparently executed in the hardened clay before the slip was applied. The left side of the face is plain, with the exception of a figure somewhat resem-

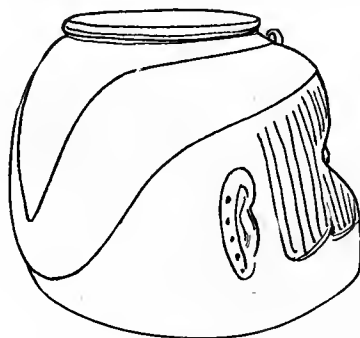


FIG. 422.—Head covering.

bling a grappling hook in outline which partially surrounds the eye. The right side is covered with a comb-like pattern, placed vertically, with the teeth upwards. The middle of the forehead has a series of

vertical lines and a few short horizontal ones just above the root of the nose. There are also three curved lines near the corner of the mouth not shown in the cut.

The diagram presented herewith (Fig. 421) gives in dotted lines the correct outline of the front face, and shows projected in solid lines the engraved figures. The significance of these markings can only be surmised in the most general way. Their function is probably the same as that of the tattooed and painted figures upon the faces of living races.

It will be well to observe that upon the forehead, at the top, there is a small perforated knob or loop. Similar appendages may be seen upon many of the clay human heads from this valley. A Mexican terracotta head now in the museum at Mexico has a like feature, and, at the same time, has closed eyes and an open mouth.

The head dress should be noticed. It seems to have been modeled after a cloth or skin cap. It extends over the forehead, falls back over the back of the head, and terminates in points behind, as seen in Fig. 422. Two layers of the material are represented, the one broad, the other narrow and pointed, both being raised a little above the surface upon which they rest. This vase head is somewhat smaller than the average human head.



FIG. 423.—Head-shaped vase: Pecan Point, Arkansas.— $\frac{1}{4}$.

[*National Museum.*]

Another of a very similar character now in the Davenport Museum is about one-half the size of this. The face is much mutilated.

A third is somewhat larger than the one illustrated, but is nearly the

same in finish and color. The face also has the semblance of death, but the features are different, possessing very decided Indian characteristics. There is no tattooing.

All of these heads, including also some of those in the National Museum, are much alike in conception and execution.

This fact will be forcibly impressed upon the mind by a study of Fig. 423, which represents a specimen recently exhumed at Pecan Point by agents of the Bureau of Ethnology. In size, form, color, finish, modeling of features, and expression, this head closely resembles the one first described. The work is not quite so carefully executed and the head has probably not such pronounced individuality. The curious device that in the other example appeared near the left eye here occurs on both sides. The lower part of the face is elaborately engraved. Three lines cross the upper lip and cheeks, reaching to the ear; a band of fret-like devices extends across the mouth to the base of the ears, and another band filled in with oblique reticulated lines passes around the chin and along the jaws. The ears are perforated as in the other case and the septum of the nose is partially broken away as if it had once held a ring. A perforated knob has occupied the top of the forehead as in the other case. The face is coated with a light yellowish gray slip, and the remainder of the surface is red.



FIG. 424.—Head-shaped vase: Arkansas.— $\frac{1}{2}$.
[Thibault Collection.]

Fig. 424 illustrates a very interesting specimen of the red pottery of Arkansas. It belongs to the collection of Mr. Thibault, of Little Rock, and was obtained from a mound in the vicinity of that city. The body is slightly lenticular and the human face, which is modeled upon one

side, interferes but little with the outline. The face is slightly relieved and extends from the neck of the vase to the widest part of the body, and laterally occupies about one-third of the circumference. The middle portion of the face is finished with a light flesh-colored slip, the remainder of the surface of the vessel being painted a bright rich red. Like the preceding example, the countenance is made to give the appearance of death or sleep. Other face-vessels of scarcely less interest are found in the Thibault collection.

HIGH-NECKED BOTTLES.

High-necked, full-bodied bottles form a decided feature in the pottery of this province. Similar vessels are rarely found in other sections of the United States, but occur in Mexico and South America. The forms are nowhere else so pronounced. They suggest the well-known water bottles of eastern countries.

In material, finish, and decorative treatment they do not differ greatly from the vases described in the preceding section.

FORM.—Their forms are greatly and often happily varied as will be seen from the series of outlines given in Fig. 425.



FIG. 425.—Scale of forms.

A striking feature is found in the presence of legs and stands. The former exhibit globular, conical, cylindrical, and terraced forms, Fig. 426. No example has any striking resemblance to European forms.



FIG. 426.—Tripods.

All are tripods, and are attached to ordinary forms of vessels in a way to suggest that they are superadded features probably rather recently acquired; at the same time legs were doubtless employed by the pre-columbian peoples. This is known to be true of Mexico, and Central and South America. There is no reason why the mound-builders of the Mississippi should not have discovered the use of such a device, readily suggested by the use of supports in building, in baking, or in using the vessels, and it would necessarily follow the modeling of life forms. It is true that quadrupeds would not directly suggest the tripod, but birds

modeled in clay were made to rest upon the feet and tail, thus giving three supports; besides it would readily be discovered that more than three supports are unnecessary.

The stands attached to these bottles are not essentially different from those described in the preceding section. They take the form of simple bands, as seen at *a*, Fig. 427; double bands, as shown in *b* and *c*; or perforated feet, as seen in *d*.

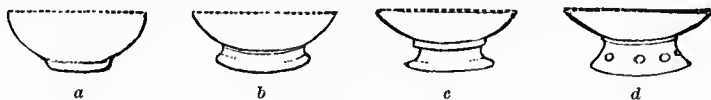


FIG. 427.—Stands.

Compound vessels are rather rare, nearly all of the varieties being outlined in Fig. 428. Some of these are formed by uniting two or even three simple forms in one. Others are only partially compound and re-



FIG. 428.—Compound forms.

semble the askoidal shapes of Greek art. Attention will be called to the probable origin of all these shapes elsewhere.

Life forms are found in all the groups of ware, but differ in the manner in which they are employed. Fig. 429 shows the usual methods of



FIG. 429.—Adaptation of the human form.

adapting the human form to high-necked bottles. Quadrupeds, fishes, and birds are treated in somewhat similar ways. The vessels represented in this and the four preceding illustrations belong to the various museums of the country.

ORNAMENT.—The styles of decoration are not distinct from those of other classes of vessels. The incised scroll patterns are sometimes very elaborate, and the designs in color are perhaps executed with greater care than in other groups.

ILLUSTRATIONS.—*Ordinary forms.*—I have not thought it advisable to figure many specimens of plain bottles, as all the varieties of outline



FIG. 330.—Bottle: Tennessee.— $\frac{1}{2}$.



FIG. 431.—Gourd-shaped vessel: Arkansas.— $\frac{1}{2}$.
[National Museum.]

are repeated in the more highly elaborated or embellished pieces. Fig. 430 represents a plain bottle of the ordinary dark porous ware. The

neck is narrow above and expands abruptly below. The body is globular. Looking at this vessel with reference to a possible origin, we observe its resemblance to a common form of gourd. By a review of the collection, we find that there are many similar vessels actually modeled in imitation of gourds. Good examples are given in the Third Annual



FIG. 432.—Bottle: Arkansas.— $\frac{1}{2}$.

Report of the Bureau of Ethnology, from which Fig. 431 is taken, and in a paper by Edward Evers in Contributions to the Archæology of



FIG. 433.—Bottle: Arkansas.— $\frac{1}{2}$.

[National Museum.]

Missouri. The markings of the original are often shown with a great deal of truthfulness in the earthenware reproductions.

Quite distinct in outline from the preceding forms is the bottle shown in Fig. 432. The neck is high and cylindrical and the body resembles a slightly-flattened globe. Set about the shoulder are four medallion-like faces, the features of which are modeled roughly in low relief. The ware is of the ordinary dark, slightly polished variety.

We have in Fig. 433 a good example of bottle-shaped vessels, the neck of which is wide and short, and the body much compressed vertically. There are a number of duplicates of it in the Museum. The specimen illustrated is in the national collection, and was obtained in Arkansas. It is a handsome vase, symmetrical in form, quite dark in color, and highly polished. The upper surface of the body is ornamented with a collar formed of a broad fillet of clay, or rather of two fillets, the pointed ends of which unite on opposite sides of the vase.



FIG. 434.—Bottle: Arkansas.— $\frac{1}{2}$.

[*National Museum.*]

The handsome vase shown in Fig. 434 is of a somewhat different type from the preceding. It was obtained, along with many other fine specimens, from mounds near Little Rock, Arkansas. It is of the dark polished ware with the usual fire mottlings. The form is symmetrical and graceful. The neck is ornamented with a band of incised chevrons and

the sloping upper surface of the body, viewed from above, has a cruciform arrangement of stepped figures engraved in the plastic clay.

One of the most striking of the bottle-shaped vases is shown in Fig. 435. It is symmetrical in shape, well proportioned and well finished. The color is now quite dark and the surface is roughened by a multitude of pits which have resulted from the decay of shell particles. The paste crumbles into a brownish dust when struck or pressed forcibly.



FIG. 435.—Engraved bottle: Arkansas.— $\frac{1}{3}$.

[*National Museum.*]

By far the most remarkable feature of the piece is the broad, convex hood-like collar that encircles the neck and spreads out over the body like an inverted saucer. This collar is curiously wrought in incised lines and low ridges by means of which two grotesque faces are produced. The eyes are readily detected, being indicated by low knobs with central pits surrounded each by three concentric circles. They are arranged in pairs on opposite sides. Between the eyes of each pair an incipient nose and mouth may be made out. The face is outlined below by the lower edge of the collar and above, by a low indented ridge crossing the collar tangent to the base of the neck.

The most expanded part of the body is encircled by an incised pattern consisting of five sets of partially interlocked scrolls—an ornament characteristic of the pottery of Arkansas.

Modifications of the simple outlines of bottles exhibit many interesting peculiarities. Compound forms are not unusual and consist generally of imitations of two vessels, the one superimposed upon or set in the mouth of another. A good example in the ordinary plain dark ware is given in Fig. 436. Similar shapes are suggested by lobed forms of the gourd.



FIG. 436.—Bottle: Arkansas.— $\frac{1}{2}$.

Other specimens may be seen in which there is only a gentle swelling of the neck, but all gradations occur between this condition and that in which forms of two vessels distinctly appear.

A very usual form is illustrated in Fig. 437. Below the overhanging lip the neck contracts and then expands until quite full, and at the base contracts again. This feature corresponds to the upper vessel suggested in the preceding case. Four flattened handles are placed about



FIG. 437.—Bottle: Pecan Point, Arkansas.— $\frac{1}{2}$.

the upper part of the neck and three rows of small conical pits encircle the most expanded portion. The body is plain and much com-

pressed vertically. A low wide stand is attached to the base. A number of good examples, now in the National Museum, were found in Arkansas.

The vase shown in Fig. 438 has also the double body, the vessels copied having been somewhat more elaborately modeled than in the preceding cases. A bottle is set within the mouth of a pot. The neck is high, wide, and flaring and rests upon the back of a rudely modeled frog, which lies extended upon the upper surface of the body. The notched encircling ridge beneath the feet of the reptile represents the rim of the lower vessel, which is a pot with compressed globular body



FIG. 438.—Bottle: Arkansas.— $\frac{1}{2}$.

and short, wide neck. This vase is of the dark, dead-surfaced ware and is quite plain. Four vertical ridges take the place of handles. I have observed other examples in which two vessels, combined in this way, served as models for the potter; one, a shell set within a cup, is illustrated in the Third Annual Report of the Bureau of Ethnology; another is given in Contributions to the Archæology of Missouri.

Fig. 439 illustrates a rather graceful form of bottle. It is furnished with a rather high perforated stand or foot, and the body is fluted vertically with narrow, widely separated channels. The neck is high and flaring and has a narrow notched collar at the base.

There are many good examples of engraved geometric designs upon bottle-shaped vessels. One of the most elaborate is presented in Fig.



FIG. 439.—Fluted bottle: Arkansas.— $\frac{1}{3}$.

440. This vessel has a full, wide neck, a heavy, flattened body, and a broad rudimentary foot. The color is quite dark, and the surface well polished. The engraved design consists of four elaborate, interlinked



FIG. 440.—Engraved bottle: Arkansas. (i)— $\frac{1}{3}$.

scrolls, comprising a number of lines, and bordered by wing-like, triangular figures, filled in with reticulated lines. This latter feature is often associated with native delineations of mythic reptiles, and it is

not impossible that this scroll work is a highly conventionalized form of some such conception. The four volute centers are slightly concave.

Three excellent examples of tripod bottles are illustrated in the accompanying figures. The first, Fig. 441, is a large-necked, rather clumsy vessel of ordinary workmanship, which rests upon three globular legs.



FIG. 441.—Tripod bottle: Arkansas.(?)—3.

These are hollow and the cavities connect with that of the body of the vessel. The whole surface is well polished and very dark.

The vessel depicted in Fig. 442 has a number of noteworthy features. In shape, it resembles the preceding with the exception of the legs, which are flat and have stepped or terraced margins. The whole surface of the vessel is decorated with characteristic designs in red and white upon a warm gray ground. A stepped figure, resembling the Pueblo emblematic "rim of the sky," encircles the neck, and semicircular figures in white appear on opposite sides at the top and base. The body is covered with scroll work in broad red lines, the spaces being filled in with white in the form of a thick earthy paste. Each of the legs has one-half red and the other white.

The vessel illustrated in Fig. 443 is of ordinary, dark, polished ware, and is entirely plain. It is peculiar in the shape of its extremities. The neck resembles a long truncated cone, and the legs are heavy and conical, being not unlike those of a common iron pot.

Eccentric forms.—In this place I am able to give but one example of what I have denominated eccentric forms. Others have been indicated

on preceding pages. The vase given in Fig. 444 has a flattish, ovoidal body from the opposite ends of which springs a hollow arch—a sort of double neck. This has been perforated at the highest point, and a low



FIG. 442.—Tripod bottle: Arkansas.— $\frac{1}{3}$.

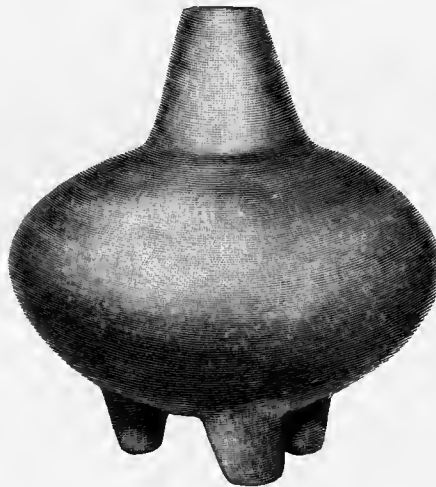


FIG. 443.—Tripod bottle: Arkansas.— $\frac{1}{3}$.

recurving rim, which serves as the mouth of the vessel, has been attached.

Another example of this form has recently been received at the Davenport Museum. It is in fragments, but was originally nicely finished and painted. Illustrations of others may be seen in the Third Annual Report of the Bureau of Ethnology, and in Contributions to



FIG. 444.—Bottle of eccentric form: Pecan Point, Arkansas.— $\frac{1}{2}$.

the Archaeology of Missouri. The specimen illustrated was found at the foot of a skeleton in a grave at Pecan Point.

This shape is common to the art of many countries, and was a great favorite in ancient Peru.



FIG. 445.—Owl-shaped bottle: Arkansas.— $\frac{1}{2}$.

Life forms.—In the introduction to this section, I have indicated the many ways in which the human form is employed in the embellishment

or the elaboration of bottles. Birds, beasts, fishes, and reptiles are treated in a similar manner.

The owl was a favorite subject with the potter, probably on account of the upright, compact figure of the body, or possibly because of some especial regard in which this bird was held.

A rather handsome specimen is shown in Fig. 445. The modeling is more than usually successful, and the surface is carefully finished. The wings are treated in a pleasing but highly conventional manner. The plumage is indicated by alternate bands of pale-red and yellow-gray, the latter being the ground color. These bands are outlined by fine incised lines. The remainder of the body is painted red. The vessel rests upon the feet and tail—a natural tripod. In many cases the head of the bird forms the top of the neck of the bottle—the body of the vessel itself being plain and globular.

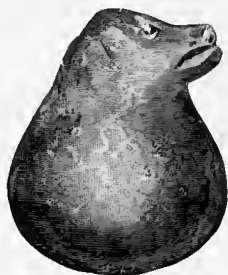


FIG. 446.—Hale's Point, Tennessee.— $\frac{1}{2}$.



FIG. 447.—Arkansas (?).— $\frac{1}{2}$.

The heads of animals are treated in the same manner, as may be seen by reference to Figs. 446 and 447.

The head shown in Fig. 446 is clearly that of a bear. The whole vessel is painted red. Fig. 447 illustrates a small dark bottle, surmounted by a head of nondescript character. The aperture in these vessels is generally at the back of the head.

Fish and reptiles appear somewhat more rarely in connection with high-necked bottles. The Davenport Museum has recently acquired a fine example, painted in red and white, which has the head and other features of a fish, modeled in relief upon the sides and bottom of the body. A small, dark vessel of like character is illustrated in the Third Annual Report of the Bureau of Ethnology.

In the example given in Figs. 448 and 449 the upper part of the neck has been modified in such a way as to accommodate a curious, medallion-like relief of the human face, while in Figs. 450 and 451 the neck is replaced by grotesque heads, the latter being intended apparently for an owl.

These potters dealt with the human figure in a very bold manner for savages. They were evidently capable of representing many creatures with accuracy, but preferred grotesque or conventional forms. A man

or a woman is generally modeled with a large body and a curious hunched back, the vertebræ appearing along the prominent ridge. The shoulder blades are usually shown with anatomical distinctness, if not with precision; the arms are long and slender and the hands rest upon the knees or the sides. The position assumed is mostly that of kneeling or



FIG. 448.—Bottle: Arkansas.— $\frac{1}{3}$.



FIG. 449.—Bottle: Arkansas.— $\frac{1}{3}$.

squatting, the feet being doubled up beneath and uniting with the bottom of the vessel.

These effigy vases are numerous, and greatly varied in size and color. They are mostly of the dark ware, but are found painted plain red or in red and white figures, some of which represent parts of the costume,



FIG. 450.—Bottle: Arkansas.— $\frac{1}{3}$.

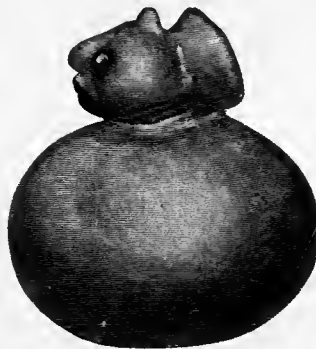


FIG. 451.—Bottle: Arkansas.— $\frac{1}{3}$.

others, emblematic devices. The largest specimen with which I am acquainted is illustrated in Fig. 452. It is well modeled, a good deal of attention having been given to the details of anatomy. The back is very much humped, and the vertebræ are represented by a series of knobs. The position of the feet beneath the body is, perhaps, worthy

of notice. This is shown in Fig. 453*b*. It will be seen that the knees, calves, ankles, and the various parts of the feet are indicated with an approach to accuracy. The projecting back is seen below. The bottom of the vessel is nearly flat, and the legs are modeled in low relief upon it. Other positions are shown in Fig. 453.



FIG. 452.—Effigy bottle: Arkansas.— $\frac{1}{3}$.

Fig. 454 illustrates a characteristic profile.

One of these vases has a cross painted upon the breast of the personage represented. The kneeling position, taken in connection with the cross, leads to the thought that perhaps the potter lived in the period

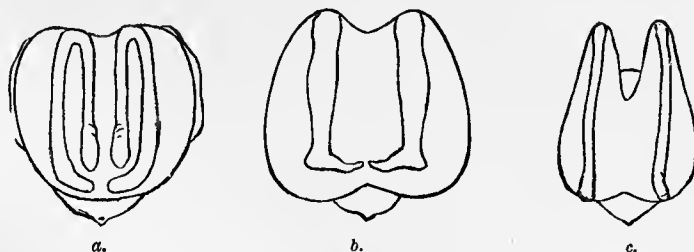


FIG. 453.—Positions of feet.

of the French missionary, and attempted to model him in clay. There is, however, no indication of costume, and the painting, with the excep-

tion of the cross, is in a purely aboriginal style of design. The ground color of the vase is, as usual, a moderately dark gray brown, and the painted figures are laid on in thick, blackish paint. Lines partially encircle the eyes, and extend down over the cheek to the neck, and a line passes around the mouth and extends down over the chin, neck, and chest to the base of the body. The horizontal bar of the cross connects the nipples. The shoulder blades and the hands are also painted black. The back is very curiously modeled and painted.



FIG. 454.—Effigy bottle: Arkansas.— $\frac{1}{2}$.



FIG. 455.—Effigy bottle: Arkansas.— $\frac{1}{2}$.

There are in the collection a number of specimens that do not come under either of the preceding heads. Of these I may mention three small figures from Paducah, Kentucky, which represent a snake, a man, and a deer. They are very rudely done, and are possibly modern work.

Attention should be called to some small specimens resembling toadstools or mushrooms in shape, some of which may have been stoppers for bottles, while others could have served as implements in some of the arts. One of these pieces has a distinctly vitrified surface. Its age, however, cannot be determined.

There are a few rude pipes of usual forms and of no special interest.

The comparative scarcity of these articles, so plentiful in some of the mound districts, is certainly worthy of the attention of archaeologists.

UPPER MISSISSIPPI PROVINCE.

I have already pointed out the fact that most of the pottery of the Upper Mississippi region belongs to a distinct family. It has never been as abundant as the pottery of the more southern sections of the country and is not well represented in our museums. There are only a few pieces in the Davenport collection and these are all in a more or less

fragmentary state. A majority are from a mound near the city of Davenport, but a limited number came from Wisconsin.

At this time it is impossible to define, with any degree of precision, the geographical limits of this class of ware. The tribes by whom it was manufactured have evidently, at one time or another, occupied the greater part of the Mississippi basin north of the mouth of the Missouri River. Similarities of material, shape, methods of manufacture, and ornamentation, tend to show that we must include the greater parts of the States of Iowa, Wisconsin, Michigan, Illinois, Indiana, and Ohio, in the area covered by this or closely related ceramic groups, and indications of its presence are discovered far beyond these limits. The mounds of Manitoba have recently furnished examples of this class of ware, and it has decided relationships with the ware of the Eastern and Northeastern States. It is not yet time to draw close distinctions, as sufficiently detailed studies of the products of the various districts have not been made.

On the shelves of our museums the difference between the two great families of the middle and Upper Mississippi are strikingly manifest. The ware of the former district, as already shown, exhibits variously tinted pastes tempered with coarsely pulverized shells or potsherds; the vases, as a rule, having full bodies, well rounded bases, and in very many cases, narrow necks. They exhibit great variety of decoration and no little care in finish. The northern family shows a dark paste tempered with sand, often apparently granitic; a rough fracture, and generally a rude finish. The shapes are comparatively simple, often long, tapering below, and flat bottomed. The ornamentation is totally unlike that of the southern variety. It consists of cord impressions, incised lines, and implement indentations arranged in figures peculiar to the district. There are many other features that, like the subtle characters of human physiognomy, cannot easily be described, but which are of first importance as indices of relationship or the lack of it.

The best preserved of the Davenport specimens was described and illustrated in the first volume of the proceedings of the Davenport Academy. This vessel, Fig. 456, was found in a mound near Davenport along with human remains, and closely associated with other relics, among which were several copper implements covered with coarse woven fabrics. Its height is eleven inches, width of aperture seven and a half inches, and diameter of base four inches. It is estimated to contain a little over one gallon.

There is a broad, shallow constriction at the neck. The walls are from one-fourth to three-eighths of an inch thick, and the margin of the rim is squared off, showing the full thickness—a strong characteristic of the northern pottery. The form is nearly symmetrical, and the surface is hand-smoothed but not polished. The paste is now dark and crumbling, and shows a rough fracture. A large percentage of sand was used in tempering. The color is a dark gray-brown. The

entire surface, with the exception of a narrow band about the base, has been covered with ornamentation. This is executed with considerable care, and shows a great deal of ingenuity and some taste. There is apparently no feature copied from nature or from ideographic art. Two or three distinct implements have been used. A part of the neck ornament was made by rolling back and forth a circular tool, a *roulette*, the edge of which was notched. A row of indented nodes has been produced upon the exterior surface of the neck by impressing upon the inside the end of a reed or hollow bone about one-fourth of an inch in diameter. Patterns of bold, rather carelessly drawn lines cover the body and seem to have been made by trailing, under pretty strong



FIG. 456.—Vase: Davenport, Iowa.— $\frac{1}{3}$.

pressure, the smooth point of a stylus—probably the bone or reed already suggested. Some of the larger indentations upon the lower part of the neck may have been made by the same implement held in an oblique position. The use to which this vessel was applied can hardly be guessed. It was found with the remains of its owner, and probably contained food or drink.

Another smaller vessel from the same locality and found under similar conditions shows the same characteristics of material, form, and ornament. There are also a few other fragments of the same ware from this group of mounds. One of these shows that decoration by the indentation of twisted cords was practiced here as elsewhere. A similar

vase tastefully decorated with indented lines about the neck, and a band of decoration consisting of broad, plain, sinuous bands upon the body, comes from a mound in Scott County, Iowa. Height six inches, diameter the same. The rims of all these vessels are square on the edge, showing the full thickness of the walls.

A very interesting vessel obtained by Captain Hall from a mound in Wisconsin is represented by a number of large fragments, probably comprising about one-half of the walls. It must have been somewhat larger than the vase given in Fig. 456, and in a general way resembles it closely. It appears to be more pointed below than the other, and has a slightly flaring rim. The walls are one-fourth of an inch thick. The paste is coarse and is tempered with sand, as in the cases already described. The lower part of the body is covered with nearly vertical cord marks. The upper part was smoothed, rather rudely, for the reception of additional decoration, which consists of several bands of indented figures.



FIG. 457.—Vase: Wisconsin.—1.

[National Museum.]

The principal implement used was apparently a stiff cord, or a slender osier wrapped with fine thread, which has been laid on and impressed with the fingers, forming nearly continuous encircling lines. Bands of short oblique lines made in the same manner also occur. Just below the margin there is a line of annular indentations made from the exterior, leaving nodes on the inside—the reverse of the treatment noticed in the vessel already illustrated. Fragments of identically marked

ware from the vicinity of Prairie du Chien may be seen in the National Museum.

A large fragment from Baraboo County, Wisconsin, shows a full body and a slightly flaring rim. The upper part is ornamented with horizontal lines of annular indentations, and the body is covered with rather rude patterns made by rolling a notched wheel or *roulette* back and forth in zigzag lines.

Two handsome pieces of this ware were recently obtained by the Bureau of Ethnology from a mound in Vernon County, Wisconsin. The finest of these, which is shown in Fig. 457, is six and a half inches in height, and in symmetry and finish rivals the best work of the south. The paste is dark, compact, and fine grained, and tempered apparently with sand. The color of the surface is a rich, mottled brown. The most striking feature of the decoration consists of a number of polished bands, extending in divers directions over the surface, the interstices being filled in with indented figures. The lip is smooth and the margin rounded. The exterior surface of the narrow collar is ornamented with oblique lines made by a *roulette*, and crossed at intervals with fine incised lines. The neck is slightly constricted, and is encircled by a polished zone one and one-fourth inches wide, having a line of indentations along the upper edge. The body is separated into four lobes by four vertical, depressed, polished bands about one inch wide. Two of these lobes are crossed obliquely by similar polished bands. These bands were all finished with a polishing implement, and are somewhat depressed, probably the result of strong pressure with this tool. They are bordered by wide incised lines. The intervening spaces are indented with a *roulette*.



FIG. 458.—Vase; Illinois.—3.

A handsome little vessel, obtained from a mound at Albany, Whitesides County, Illinois, is illustrated in Fig. 458. It apparently belongs to the silicious ware of the north. The shape and ornamentation are

somewhat novel. Four large flattish lobes occur about the body, on each of which a figure somewhat resembling a Maltese cross has been made by incising or impressing broad, shallow lines. The remainder of the body is covered with marks that resemble impressions of a coarse osier basket. This specimen was collected by Mr. C. A. Dodge, and a short description was published by Prof. W. H. Pratt in the third volume of the proceedings of the Davenport Academy.

GULF PROVINCE.

Our museums contain but few pieces of pottery from the Lower Mississippi, and in the Davenport Academy collection there are probably not more than a dozen typical examples of the leading varieties of ware of the Gulf States. Louisiana and Mississippi have furnished some very fine specimens of the pottery of the middle province, more refined, perhaps, in form, material, and finish than the ware of Arkansas and Missouri, but still differing decidedly from the typical pottery of Alabama and Georgia. Not wishing at present to enter upon the detailed study of the latter class of ware, I shall present only the few examples contained in the Davenport collection. The southern ware is characterized by refinement of outline, color, finish and ornament, and is distinguished from that of the Middle Mississippi by its material, which is a fine-grained paste, tempered with very fine silicious matter instead of pulverized shells.

The little cup given in Fig. 459 is from Mobile, Alabama. It is pointed at opposite ends and was probably modeled after or within some



FIG. 459.—Cup: Alabama.— $\frac{1}{2}$.

basket or fruit shell, the impressions from which are seen on the surface. The paste contains no perceptible tempering material.

The largest and most pleasing vessel of this class is from Alabama, and is shown in Fig. 460.

The aperture is ten and a half inches in diameter, and the height nine and one-half inches. The form is full above and somewhat conical below. The walls are thin and even and the surface well polished.

The color is dark and shows the usual fire mottlings. There is no admixture of shell material, finely pulverized micaceous matter appearing in its place. The ornamentation is simple, but is applied in a way to greatly enhance the beauty of the vessel. It consists of a single broad zone of incised figures. Three zigzag lines meander the middle

of the band and the intervening triangles are filled in with groups of straight lines. All the lines are well drawn and appear to have been cut with a sharp point in the dry clay.



FIG. 460.—Bowl: Alabama.— $\frac{1}{2}$.

Bottle-shaped vases are not found to any great extent outside of the Mississippi Valley, and are quite rare in Alabama, Georgia, and Florida.

The piece illustrated in Fig. 461 is from Mississippi, and in most re-



FIG. 461.—Bottle: Mississippi.— $\frac{1}{2}$.

spects is identical with the ware of the Gulf Province. The paste is silicious, fine-grained, and quite hard. The color is slightly ferruginous

and clouded with fire stains from the baking. The body is ornamented with the engraved figure of a bird apparently intended for an eagle. The head, with its notched and strongly curved beak and conventionalized crest, occupies one side. The wings may be seen at the right and left, while the tail appears on the side opposite the head. The flattened base of the vessel occupies the place of the body. The lines have been scratched with a sharp point in the hardened clay. Certain spaces in the plumes, wings, and tail are filled in with reticulated lines.

The bottle presented in Fig. 462 is embellished with a rather remarkable design in color. The material is fine grained and without admixture of shell. The color of the paste is a pale, salmon gray. The surface is coated with a thick slip or enamel of whitish clay, very fine grained and smooth; upon this the design was painted, not in the thick earthy color employed farther north, but in what appears to be a dark purplish-gray stain. The design upon the body is wholly unlike anything yet described. It is developed in the light ground tint by filling in the interstices with the dark color. The peculiar character of



FIG. 462.—Bottle: Alabama.— $\frac{1}{2}$.

this design inclines me to the view that it probably had an ideographic origin, although possibly treated here as pure decoration. The open hand is sometimes seen, in both the decorative and the symbolic work of the Gulf coast tribes, and is not unknown elsewhere. The figures alternating with the hands are suggestive of a highly conventionalized face, the eyes being indicated by the volutes and the mouth and teeth by the lower part of the figure, as will be seen in the fully projected design, Fig. 463. The neck has two indistinct bands of triangular dentate figures apparently painted in the dark color. The bottom is flat-

tish and without the coating of light clay. Both paste and slip can be readily scratched with the finger nail. This vase was found in Franklin County, Alabama, near the Mississippi line.



FIG. 463.—Painted design.

RÉSUMÉ.

Attention has been called to the great numbers of pieces of earthenware recovered from the mounds and graves of the middle province of the Mississippi Valley. In certain districts—as remarked by one of our collectors—we have but to dig to fill museums. Such districts must have been occupied for a long period by a numerous people who recognized the claims of the dead upon their worldly treasures. The burial grounds of many other sections of the American continent are correspondingly rich in ceramic remains.

The vessels were not to any extent cinerary, and probably not even mortuary in the sense of having been constructed especially for inhumation with the dead. They were receptacles for food, drink, paint, and the like, placed in the grave along with other possessions of the departed in obedience to the demands of an almost universal custom.

The material employed in manufacture embraced clay in all grades of refinement, from coarse loamy earths to the refined slips used in surface finish. The tempering materials—used in greater or lesser quantity according to the character of the vessel to be made—consisted of shell, sand, and potsherds reduced to various degrees of pulverulence.

The stage of the art represented by this ware is one of hand building purely. No lathe or other revolving device was known, although varieties of improvised molds—baskets, gourds, and the like, such as are known to nearly all pottery-making peoples—were frequently employed.

The highest degree of finish known was attained by the application of a slip or wash of fine clay which was given a good degree of mechanical polish by means of a smooth implement held in the hand. Ornament was produced by both flat and plastic methods. The colors used in painting were white, black, and red earths. The plastic subjects were incised, stamped, relieved, and modeled in the round.

The period was one of open-air baking, a moderate degree of hard-

ness being secured. The texture was porous and the vessels were without resonance. The paste exhibits two distinct varieties of color which may be described roughly as light and dark. A certain range of dark hues—blacks, browns, and grays—were probably produced by “smother baking.” Another set of colors embracing light reddish and yellowish grays resulted from changes in the clay produced by simple open air baking.

A feature worthy of especial note is the great diversity of form—indicating a long practice of the art, a high specialization of uses, and a considerable variety in the originals copied. The manual skill exhibited is of no mean order. Symmetry of form combined with considerable grace of outline has been achieved without the wheel—a result attained in still greater perfection by other American races. Notwithstanding the great diversity of the forms of vessels, the very primitive condition of the art is indicated by the absence of bricks, tiles, whistles, lamps, spindle-whorls, toys, and statuettes: The models from which the vessels were copied must have been quite varied, comprising shells of mollusks—marine and fresh-water—gourd shells of varying shapes, and vessels of wicker, bark, horn, and wood, such as are in common use with our western and northern tribes.

The execution of the ornamental designs indicates a rather low grade of skill. This is especially true of work in color, which has the appearance of a newly acquired art. Intaglio and relief work evinces much greater skill—the incised forms especially giving evidence of long experience.

In subject-matter the ornament employed bespeaks nothing higher perhaps than could be expected of our historic tribes. The great body of the devices are geometric, and comprise such motives as could have developed within the art or that might have been borrowed from closely associated arts. A small percentage of incised linear designs come, apparently, from mythologic sources, and delineate, in a rude way, both men and animals.

The modeling of life forms in connection with earthen vessels constitutes a feature of considerable interest, the highest known achievement being represented by a series of vases imitating human heads. Animal forms are generally rudely modeled, the imitation of nature having been apparently a secondary consideration—the associated idea or the fancy for the grotesque being the stronger motive. The animal forms are inferior to those carved in stone by some of the mound-building peoples.

That any of these images were idols in the ordinary acceptation of the term is an idea that cannot be entertained. They are always associated directly with vessels, and could not be more than representations of the tutelary deities supposed to be interested in the uses or ceremonies to which the vessels were assigned.

In form there are many suggestions of the characteristic utensils of

the north, in ornament there are occasional hints of the south—of Caribbean and Mexican art.

With the Pueblo peoples, notwithstanding their proximity, there is hardly a hint of relationship of any kind. Unlike the Pueblos, the ethnical environment of the Mississippi Valley races would seem to have been considerably diversified; there was less isolation; yet there are strong indications that the art is mainly of indigenous growth, as there is unity and consistency in all its features.

In reference to the period of culture represented by this ware, a few words may be added. There is no feature in it that could not reasonably be expected of the more advanced historic tribes of the valley. It indicates a culture differing in many ways from that of the Pueblos, ancient and modern, but on the whole rather inferior to it. The work of Mexico, Central and South America is decidedly superior in every essential feature.

There are many difficulties in the way of instituting a comparison of this work with that of the primitive work of the Old World. These I shall not stop to present in this place. In the most general way, I may say that the ceramic art of the Middle Mississippi is apparently superior to that of the stone age in Europe, but little can be inferred in regard to relative grades of culture. In classic countries it is difficult to find its true equivalent. To reach a stage of art correspondingly low we shall have to go behind the heroic age—to pass down through more than the five prehistoric cities of the hill of Hissarlik and descend into the lowest archæologic substratum. Even this, unless it represent the first achievement of that grade of art upon the continent, would afford uncertain data for comparative study.

A given grade of ceramic achievement runs so freely up and down the scale of culture that alone its evidence is of little value in determining culture status.

